



CONTENTS

BODY COMPOSITION OF THE MALE AND FEMALE REFERENCE INFANTS, <i>Samuel J. Fomon and Steven E. Nelson</i>	1
DIETARY FLAVONOIDS: BIOAVAILABILITY, METABOLIC EFFECTS, AND SAFETY, <i>Julie A. Ross and Christine M. Kasum</i>	19
NUTRITIONAL IMPACT OF INTESTINAL HELMINTHIASIS DURING THE HUMAN LIFE CYCLE, <i>D. W. T. Crompton and M. C. Nesheim</i>	35
REGULATION OF NITRIC OXIDE SYNTHESIS BY DIETARY FACTORS, <i>Guoyao Wu and Cynthia J. Meininger</i>	61
REGULATION OF ENZYMES OF THE UREA CYCLE AND ARGININE METABOLISM, <i>Sidney M. Morris Jr.</i>	87
NUTRITIONAL IMPACT OF PRE- AND PROBIOTICS AS PROTECTIVE GASTROINTESTINAL ORGANISMS, <i>Jonathan E. Teitelbaum and W. Allan Walker</i>	107
HYDROXYLASE ENZYMES OF THE VITAMIN D PATHWAY: EXPRESSION, FUNCTION, AND REGULATION, <i>John L. Omdahl, Howard A. Morris, and Brian K. May</i>	139
PPAR γ AND GLUCOSE HOMEOSTASIS, <i>Frédéric Picard and Johan Auwerx</i>	167
IN VIVO KINETICS OF FOLATE METABOLISM, <i>Jesse F. Gregory III and Eoin P. Quinlivan</i>	199
BIOTIN IN METABOLISM AND MOLECULAR BIOLOGY, <i>Robert J. McMahon</i>	221
MALNUTRITION AND POVERTY, <i>Manuel Peña and Jorge Bacallao</i>	241
GENETIC EFFECTS OF METHYLATION DIETS, <i>Ignatia B. Van den Veyver</i>	255
HOW HOST-MICROBIAL INTERACTIONS SHAPE THE NUTRIENT ENVIRONMENT OF THE MAMMALIAN INTESTINE, <i>Lora V. Hooper, Tore Midtvedt, and Jeffrey I. Gordon</i>	283
SARCOPENIA, WEIGHT LOSS, AND NUTRITIONAL FRAILTY IN THE ELDERLY, <i>Connie W. Bales and Christine S. Ritchie</i>	309
MUSCLE TRIGLYCERIDE AND INSULIN RESISTANCE, <i>David E. Kelley, Bret H. Goodpaster, and Len Storlien</i>	325



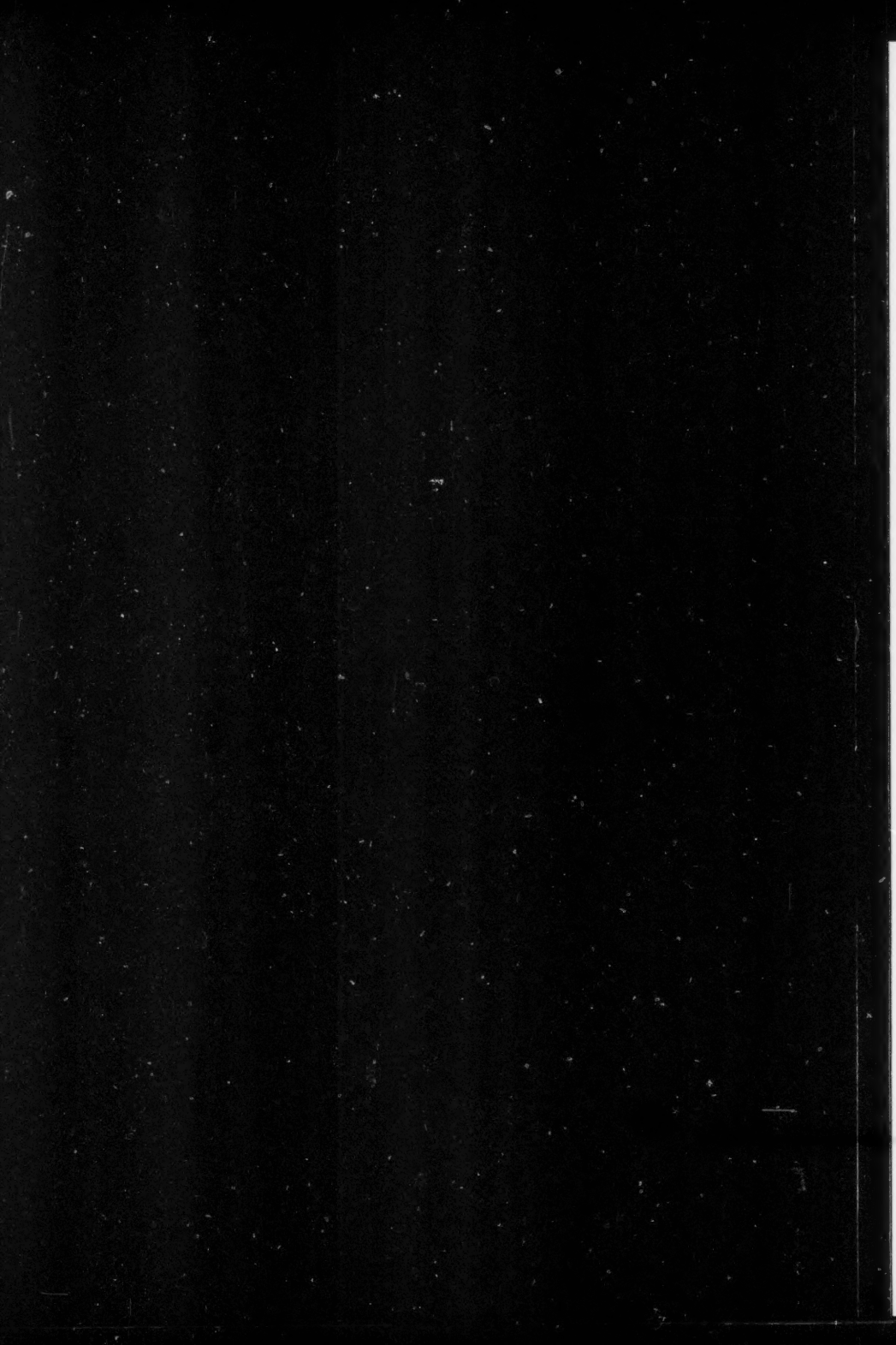
CONTENTS

BODY COMPOSITION OF THE MALE AND FEMALE REFERENCE INFANTS, <i>Samuel J. Fomon and Steven E. Nelson</i>	1
DIETARY FLAVONOIDS: BIOAVAILABILITY, METABOLIC EFFECTS, AND SAFETY, <i>Julie A. Ross and Christine M. Kasum</i>	19
NUTRITIONAL IMPACT OF INTESTINAL HELMINTHIASIS DURING THE HUMAN LIFE CYCLE, <i>D. W. T. Crompton and M. C. Nesheim</i>	35
REGULATION OF NITRIC OXIDE SYNTHESIS BY DIETARY FACTORS, <i>Guoyao Wu and Cynthia J. Meininger</i>	61
REGULATION OF ENZYMES OF THE UREA CYCLE AND ARGININE METABOLISM, <i>Sidney M. Morris Jr.</i>	87
NUTRITIONAL IMPACT OF PRE- AND PROBIOTICS AS PROTECTIVE GASTROINTESTINAL ORGANISMS, <i>Jonathan E. Teitelbaum and W. Allan Walker</i>	107
HYDROXYLASE ENZYMES OF THE VITAMIN D PATHWAY: EXPRESSION, FUNCTION, AND REGULATION, <i>John L. Omdahl, Howard A. Morris, and Brian K. May</i>	139
PPAR γ AND GLUCOSE HOMEOSTASIS, <i>Frédéric Picard and Johan Auwerx</i>	167
IN VIVO KINETICS OF FOLATE METABOLISM, <i>Jesse F. Gregory III and Eoin P. Quinlivan</i>	199
BIOTIN IN METABOLISM AND MOLECULAR BIOLOGY, <i>Robert J. McMahon</i>	221
MALNUTRITION AND POVERTY, <i>Manuel Peña and Jorge Bacallao</i>	241
GENETIC EFFECTS OF METHYLATION DIETS, <i>Ignatia B. Van den Veyver</i>	255
HOW HOST-MICROBIAL INTERACTIONS SHAPE THE NUTRIENT ENVIRONMENT OF THE MAMMALIAN INTESTINE, <i>Lora V. Hooper, Tore Midtvedt, and Jeffrey I. Gordon</i>	283
SARCOPENIA, WEIGHT LOSS, AND NUTRITIONAL FRAILTY IN THE ELDERLY, <i>Connie W. Bales and Christine S. Ritchie</i>	309
MUSCLE TRIGLYCERIDE AND INSULIN RESISTANCE, <i>David E. Kelley, Bret H. Goodpaster, and Len Storlien</i>	325

THE ROLE OF VITAMIN A IN MAMMALIAN REPRODUCTION AND EMBRYONIC DEVELOPMENT, <i>Margaret Clagett-Dame and Hector F. DeLuca</i>	347
FATTY ACID TRANSPORT ACROSS MEMBRANES: RELEVANCE TO NUTRITION AND METABOLIC PATHOLOGY, <i>Tahar Hajri and Nada A. Abumrad</i>	383
PHYSIOLOGIC DETERMINANTS OF THE ANOREXIA OF AGING: INSIGHTS FROM ANIMAL STUDIES, <i>Barbara A. Horwitz, Cynthia A. Blanton, and Roger B. McDonald</i>	417
CERULOPLASMIN METABOLISM AND FUNCTION, <i>Nathan E. Hellman and Jonathan D. Gitlin</i>	439
METABOLIC LESSONS FROM GENETICALLY LEAN MICE, <i>Marc L. Reitman</i>	459
CAROTENOID BIOAVAILABILITY AND BIOCONVERSION, <i>Kyung-Jin Yeum and Robert M. Russell</i>	483
DIETARY CONJUGATED LINOLEIC ACID IN HEALTH: PHYSIOLOGICAL EFFECTS AND MECHANISMS OF ACTION, <i>Martha A. Belury</i>	505
PHYTOSTEROLS IN HUMAN NUTRITION, <i>Richard E. Ostlund Jr.</i>	533
INDEXES	
Subject Index	551
Cumulative Index of Contributing Authors, Volumes 18–22	575
Cumulative Index of Chapter Titles, Volumes 18–22	578

ERRATA

An online log of corrections to *Annual Review of Nutrition* chapters (if any, 1997 to the present) may be found at <http://nutr.annualreviews.org/>



SUBJECT INDEX

A

ABCG proteins

phytosterols and, 540, 544

Aberrant crypts

pre- and probiotics, 107,
114, 127

Absorption

biotin and, 225–26

carotenoid bioavailability
and bioconversion,
483–86

cholesterol

phytosterols and, 533,
537–40, 543

dietary flavonoids and,
23–24

helminths and nutritional
impairment, 35, 40, 45–46

mineral

pre- and probiotics,
125–26

Aceruloplasminemia

ceruloplasmin and, 439,
446–49

Acetate

host-microbial interactions
in gut and, 296–97

N-Acetylcysteine

sarcopenia, nutritional
frailty, and weight loss in
the elderly, 318

Activation

PPAR γ and glucose
homeostasis, 167–83
vitamin D hydroxylase
enzymes and, 150–51

Actos

PPAR γ and glucose
homeostasis, 177–78

Adenosine triphosphate

(ATP)

host-microbial interactions
in gut and, 295–97

S-Adenosylhomocysteine
(SAHH)

diet and genome
methylation, 264

S-Adenosylmethionine
(SAM)

diet and genome
methylation, 255–74
sarcopenia, nutritional
frailty, and weight loss in
the elderly, 318
PPAR γ and glucose
homeostasis, 171–73

Adiponectin

PPAR γ and glucose
homeostasis, 174–75

Adipose tissue

anorexia of aging and,
417–29
conjugated linoleic acid
metabolism and, 505–10
fatty acid transport across
membranes and, 391–402
genetically lean mice and,
459, 468–69, 473–74
muscle triglyceride and
insulin resistance, 325–41
PPAR γ and glucose
homeostasis, 167–83
reference infant body
composition and, 1–14

Adolescents

malnutrition and poverty,
244, 247

Africa

malnutrition and poverty,
245–46

pre- and probiotics, 112

African Americans

malnutrition and poverty,
249

Aging

anorexia of aging and,
417–29
carotenoid bioavailability
and bioconversion, 494
diet and genome
methylation, 267
genetically lean mice and,
466–67
sarcopenia, nutritional
frailty, and weight loss in
the elderly, 309–18

Aglycones

dietary flavonoids and, 19,
23

agouti gene

diet and genome
methylation, 257, 271

Albendazole

helminths and nutritional
impairment, 49

Alcoholism

folate metabolism in vivo
kinetics and, 207

Allergy

pre- and probiotics, 107,
111, 120–22

all-*trans* retinoic acid (atRA)

vitamin A in reproduction
and embryonic
development, 347–69

Ambient temperature

genetically lean mice and,
466–67

Amino acid homeostasis

host-microbial interactions
in gut and, 297–98

Amino acids

nitric oxide synthesis and

- diet, 61, 64–66, 72
- Ammonia
pre- and probiotics, 127
- Anabolic interventions
sarcopenia, nutritional
frailty, and weight loss in
the elderly, 317
- Anaerobic bacteria
host-microbial interactions
in gut and, 283–301
- Ancylostoma duodenale*
helminths and nutritional
impairment, 37, 50
- Androstenedione
dietary flavonoids and, 27
- Anemia
iron-deficiency
helminths and nutritional
impairment, 35, 42, 44,
47–51
- Aneuploidy
diet and genome
methylation, 270
- Anorectic agents
sarcopenia, nutritional
frailty, and weight loss in
the elderly, 309–18
- Anorexia of aging
cholecystokinin, 422–23
conclusions, 428–29
cytokines, 428
dopamine, 428
endogenous opioids,
421–22
gastrointestinal signals,
420–21
hypothalamic
neuropeptides, 425–28
insulin, 424–25
introduction, 418–19
leptin, 423–24
long-term regulators of
food intake, 423–28
neuropeptide Y, 425–28
norepinephrine, 428
oronasal signals, 420–21
overview of control of food
intake in young
mammals, 419
short-term regulators of
food intake, 420, 421–23
- Anthocyanidins
dietary flavonoids and, 19,
21–22, 25
- Antibiotics
helminths and nutritional
impairment, 44, 49
pre- and probiotics, 117–18
- Antidiabetic agents
PPAR γ and glucose
homeostasis, 167–83
- Anthelmintic drugs
helminths and nutritional
impairment, 35, 39, 43,
47, 49–51
- Antioxidants
dietary flavonoids and,
19–20, 24–26
- Antiproliferative activity
dietary flavonoids and,
27–28
- ApABG
folate metabolism in vivo
kinetics and, 208–9
- Apigenin
dietary flavonoids and, 19,
21–22, 27
- Apoptosis
dietary flavonoids and, 28
vitamin D hydroxylase
enzymes and, 139, 147
- Arachidonate
conjugated linoleic acid
metabolism and, 519–21
- Arginase
urea cycle and arginine
metabolism, 87–91,
95–97
- L-Arginine
nitric oxide synthesis and
diet, 61–76
- Ascariasis
helminths and nutritional
impairment, 35–53
- Ascaris lumbricoides*
carotenoid bioavailability
and bioconversion, 494
helminths and nutritional
impairment, 36–37, 39,
43–46, 49–51
- Asia
helminths and nutritional
impairment, 51
malnutrition and poverty,
245
- Atherosclerosis
conjugated linoleic acid
metabolism and, 505,
508, 514–15
- Austria
pre- and probiotics, 119
- Avandia
PPAR γ and glucose
homeostasis, 177–79
- AZ 242
PPAR γ and glucose
homeostasis, 182
- Azorhizobium* spp.
host-microbial interactions
in gut and, 286
- Azoxymethane (AOM)
pre- and probiotics, 107,
114–15, 127
- B**
- Bacillus cereus*
pre- and probiotics, 110
- Background genotype
genetically lean mice and,
466–67
- Bacteria
host-microbial interactions
in gut and, 283–301
pre- and probiotics, 107–28
- Bacterial diarrhea
pre- and probiotics, 118–19
- Bacteroides* spp.
host-microbial interactions
in gut and, 286–87,
290–91, 298
pre- and probiotics, 110

- Bacteroides thetaiotamicron*
host-microbial interactions
in gut and, 283–301
- BADGE
PPAR γ and glucose
homeostasis, 181
- Bali
helminths and nutritional
impairment, 52–53
- Bangladesh
pre- and probiotics, 119
- Beef
conjugated linoleic acid
metabolism and, 505, 512
- β -cells
pancreatic
PPAR γ and glucose
homeostasis, 172,
176–77
- Betaine
diet and genome
methylation, 255–74
- BH4 factor
nitric oxide synthesis and
diet, 65, 68–69, 71, 73,
75–76
- Bifidobacterium* spp.
host-microbial interactions
in gut and, 291, 300
pre- and probiotics, 110,
112, 114–15, 117, 119–23
- Biguanides
PPAR γ and glucose
homeostasis, 177
- Bioactive retinoids
vitamin A in reproduction
and embryonic
development, 354–57,
359
- Biotin
host-microbial interactions
in gut and, 298
in metabolism and
molecular biology
absorption, 225–26
biotinidase, 227–28
conditions of
suboptimum biotin
status, 229–30
future research, 232
gene expression, 230–32
introduction, 222
new technologies for
assessment of biotin
status, 228–29
perspective, 222–25, 232
transport, 225–27
- Biotinidase
biotin and, 221
- Birth defects
diet and genome
methylation, 255–74
folate metabolism in vivo
kinetics and, 200
- Birth weight
helminths and nutritional
impairment, 42, 49
malnutrition and poverty,
243
- Body composition
male and female reference
infants and, 1–14
- Body fat mass
conjugated linoleic acid
metabolism and, 505,
507–10
- Body mass index (BMI)
malnutrition and poverty,
248
- Body weight
anorexia of aging and,
417–29
genetically lean mice and,
465, 466
sarcopenia, nutritional
frailty, and weight loss in
the elderly, 309–18
- Bolivia
malnutrition and poverty,
248
- Bone mineral content
reference infant body
composition and, 1, 8,
10–14
- Bradyrhizobium* spp.
host-microbial interactions
in gut and, 286
- Brazil
helminths and nutritional
impairment, 44
malnutrition and poverty,
248–49
- Brown adipose tissue
conjugated linoleic acid
metabolism and, 507
- Butyrate
host-microbial interactions
in gut and, 296–97
- C**
- C677T polymorphism
folate metabolism in vivo
kinetics and, 210–11
- Ca²⁺
nitric oxide synthesis and
diet, 65, 69–70
vitamin D hydroxylase
enzymes and, 139, 146,
153
- Calcitonin
vitamin D hydroxylase
enzymes and, 139, 155
- Calorie storage
muscle triglyceride and
insulin resistance, 325–41
- Campestanol
phytosterols and, 535,
539–40
- Campesterol
phytosterols and, 534, 536,
539, 542
- Campylobacter* spp.
pre- and probiotics, 119
- Canada
conjugated linoleic acid
metabolism and, 524
- Cancer
conjugated linoleic acid
metabolism and, 505,
508, 511–14, 524
diet and genome

- methylation, 265-66
- dietary flavonoids and, 19, 26-31
- folate metabolism in vivo kinetics and, 200
- host-microbial interactions in gut and, 297
- pre- and probiotics, 107, 113-15, 127
- sarcopenia, nutritional frailty, and weight loss in the elderly, 317-18
- vitamin D hydroxylase enzymes and, 147-48, 155
- Candida* spp.
 - pre- and probiotics, 112
- Capacity building
 - malnutrition and poverty, 250
- CAP protein
 - PPAR γ and glucose homeostasis, 175
- Carbohydrate
 - host-microbial interactions in gut and, 283-301
 - muscle triglyceride and insulin resistance, 325-41
 - nitric oxide synthesis and diet, 61, 66-67, 73
 - reference infant body composition and, 8-11
- Carboxylation reactions
 - biotin and, 221-32
- Cardiovascular disease
 - diet and genome methylation, 267
 - dietary flavonoids and, 19, 28-29
- Cardiovascular function
 - nitric oxide synthesis and diet, 61, 71
- Caribbean region
 - malnutrition and poverty, 245-46
- β -Carotene
 - carotenoid bioavailability and bioconversion, 483-98
 - dietary flavonoids and, 31
 - helminths and nutritional impairment, 45
 - phytosterols and, 540
- Carotenoids
 - bioavailability and bioconversion
 - absorption, 484-86
 - aging, 494
 - breakdown, 489
 - β -carotene cleavage pathways, 487-88
 - carotenoid type, 489-90
 - chylomicrons, 495
 - conclusions, 497-98
 - fat, 493
 - fiber, 493
 - food matrix, 490-92
 - food processing, 491
 - interactions, 492-93
 - introduction, 484
 - isomeric forms, 491-92
 - macular pigment density measurement, 497
 - metabolism, 486-89
 - methods to determine bioavailability, 494-97
 - nutritional status, 494
 - oral-fecal balance technique, 496
 - parasite infection, 494
 - serum/plasma response after carotenoid ingestion, 495
 - stable isotope application, 496-97
 - transport, 484-86
- Catabolism
 - folate metabolism in vivo kinetics and, 202, 207, 212
 - urea cycle and arginine metabolism, 95-97
 - vitamin A in reproduction and embryonic development, 358-60
- Catechins
 - dietary flavonoids and, 19, 21-22, 27, 30
- Catecholamines
 - urea cycle and arginine metabolism, 96
- c-Cbl proto-oncogene
 - PPAR γ and glucose homeostasis, 175
- CD36 protein
 - fatty acid transport across membranes and, 383, 390-402
- Cell differentiation
 - host-microbial interactions in gut and, 283, 297
 - vitamin D hydroxylase enzymes and, 139, 147
- Cell growth
 - vitamin D hydroxylase enzymes and, 139-57
- Cellular water
 - reference infant body composition and, 1, 8-11
- Central America
 - malnutrition and poverty, 245
- Central nervous
 - system-mediated lean mice
 - genetically lean mice and, 471-72
- Cerebrovascular disease
 - dietary flavonoids and, 28-29
- Ceruloplasmin
 - acceruloplasminemia, 446-48
 - differential diagnosis, 449
 - mechanisms of disease, 449-52
 - cell biology, 444-45
 - conclusions, 452
 - function, 445-46
 - gene structure and

- expression, 441–42
introduction, 439–40
metabolism, 442–44
multicopper oxidases, 440–41
- Chemotherapy
helminths and nutritional impairment, 51
- Children
carotenoid bioavailability and bioconversion, 494
conjugated linoleic acid metabolism and, 524
helminths and nutritional impairment, 35, 39–40, 42–44, 46–47, 50–51
malnutrition and poverty, 243–44, 247
- China
helminths and nutritional impairment, 36
- Cholecystokinin (CCK)
anorexia of aging and, 422–23
- Cholesterol
conjugated linoleic acid metabolism and, 514
nitric oxide synthesis and diet, 61, 67–68, 73
phytosterols and, 533–45
PPAR γ and glucose homeostasis, 179–80, 182
pre- and probiotics, 112–13
vitamin D hydroxylase enzymes and, 140
- Choline
diet and genome methylation, 263
- Chondroitin sulfate
host-microbial interactions in gut and, 290–91
- Chromium picolinate
sarcopenia, nutritional frailty, and weight loss in the elderly, 317
- chuR* mutant
host-microbial interactions in gut and, 291
- Chylomicrons
carotenoid bioavailability and bioconversion, 495
- Cichorium intybus*
pre- and probiotics, 124
- Citrulline
urea cycle and arginine metabolism, 89, 90–91, 93–95
- Cl $^-$
reference infant body composition and, 4
- Cleavage
carotenoid bioavailability and bioconversion, 483, 487
- Climax community
host-microbial interactions in gut and, 285
- Clostridium* spp.
pre- and probiotics, 110, 115, 118–20
- Coactivators
vitamin D hydroxylase enzymes and, 139, 150–51, 153
- Cofactors
PPAR γ and glucose homeostasis, 167–83
- Colombia
malnutrition and poverty, 248
- Colon
pre- and probiotics, 107–28
- Color
dietary flavonoids and, 19
- Comet assay
pre- and probiotics, 115
- Commensalism
host-microbial interactions in gut and, 286
- Conjugated linoleic acid (CLA)
adipose tissue reduction, 507–10
atherosclerotic plaque formation, 514–15
carcinogenesis, 511–14
differential effects on body fat in humans, 510
eicosanoid formation, 518–20
fatty acid composition of phospholipids, 518–20
gene expression, 520–23
health properties, 506–15
introduction, 506
mechanisms of action, 509–10, 512–13
metabolism, 515–24
lipid, 518–23
miscellaneous health properties, 515
summary, 524–25
tumor promotion, 513–14
type 2 diabetes, 510–11
- Constitutive synthesis
nitric oxide synthesis and diet, 64–72
- Copper
ceruloplasmin and, 439–52
- Coronary heart disease
dietary flavonoids and, 28–29
phytosterols and, 533, 540, 542
- CpG dinucleotides
diet and genome methylation, 255–74
- Creatine
sarcopenia, nutritional frailty, and weight loss in the elderly, 317
- Crohn's disease
pre- and probiotics, 122–23
- CRT1 copper transporter
host-microbial interactions in gut and, 299
- csuF* mutant
host-microbial interactions in gut and, 291
- Cyanidin

- dietary flavonoids and, 19, 22
 Cycloartenol
 phytosterols and, 535
 Cytochrome P450
 vitamin D hydroxylase enzymes and, 139–57
 Cytokines
 anorexia of aging and, 428
 conjugated linoleic acid metabolism and, 515, 519
 pre- and probiotics, 107, 112, 121–23, 128
 sarcopenia, nutritional frailty, and weight loss in the elderly, 309–18
 urea cycle and arginine metabolism, 87, 96
 Cytosines
 diet and genome methylation, 255–74
 Cytosol
 folate metabolism in vivo kinetics and, 214
- D**
- Daidzein
 dietary flavonoids and, 19, 22, 24
 Dairy products
 conjugated linoleic acid metabolism and, 505, 524
 Dehydroepiandrosterone (DHEA)
 sarcopenia, nutritional frailty, and weight loss in the elderly, 317
 Denmark
 dietary flavonoids and, 23
 Depression
 diet and genome methylation, 267–68
 Desaturation
 conjugated linoleic acid metabolism and, 505, 516, 521, 523
 4,4-Desmethylsterols
 phytosterols and, 542
 Deuterium dilution method
 reference infant body composition and, 5
 Developing countries
 helminths and nutritional impairment, 35–53
 malnutrition and poverty, 241–51
 Development
 diet and genome methylation, 270–71
 embryonic
 vitamin A in reproduction and, 347–69
 helminths and nutritional impairment, 35, 42
 malnutrition and poverty, 241–51
 Dexamethasone
 urea cycle and arginine metabolism, 97
 Diabetes mellitus type 2
 conjugated linoleic acid metabolism and, 506, 508, 510–11
 fatty acid transport across membranes and, 399–400
 genetically lean mice and, 459–76
 muscle triglyceride and insulin resistance, 325–41
 PPAR γ and glucose homeostasis, 167–83
 Diarrhea
 pre- and probiotics, 107, 111, 116–19
 Diet
 conjugated linoleic acid metabolism and, 505–25
 flavonoids and, 19–31
 genetically lean mice and, 466–67
 host-microbial interactions in gut and, 300
 nitric oxide synthesis and, 61–76
 phytosterols and, 533–45
 Diethylstilbestrol (DES)
 dietary flavonoids and, 27
 Diffusion
 fatty acid transport across membranes and, 385–90
 Digestion
 helminths and nutritional impairment, 35, 45–46
 1,2-Dimethylhydrazine (DMH)
 pre- and probiotics, 107, 114–15, 127
 4,4-Dimethylsterols
 phytosterols and, 542
 Diosmetin
 dietary flavonoids and, 22
 Disease
 ceruloplasmin and, 439–52
 conjugated linoleic acid metabolism and, 505–6
 diet and genome methylation, 265–71
 nitric oxide synthesis and diet, 61
 phytosterols and, 533, 540, 542
 PPAR γ and glucose homeostasis, 167–83
 pre- and probiotics, 107, 116–23
 urea cycle and arginine metabolism, 98
 vitamin D hydroxylase enzymes and, 139, 146–49
 DNA microarrays
 host-microbial interactions in gut and, 298
 DNA topoisomerase II
 dietary flavonoids and, 28
 Dominant-negative receptors
 vitamin A in reproduction and embryonic

- development, 367
- Dominican Republic
malnutrition and poverty,
248
- Dopamine
anorexia of aging and, 428
- Dual agonists
PPAR γ and glucose
homeostasis, 182
- Dual energy X-ray
absorptiometry (DEXA)
reference infant body
composition and, 1, 11,
13–14
- E**
- Eastern Africa
malnutrition and poverty,
245
- Egypt
pre- and probiotics, 119
- Eicosanoids
conjugated linoleic acid
metabolism and, 518–20
- Elderly
anorexia of aging and,
417–29
carotenoid bioavailability
and bioconversion, 494
conjugated linoleic acid
metabolism and, 524
dietary flavonoids and,
28–30
sarcopenia, nutritional
frailty, and weight loss in,
309–18
- Elongation
conjugated linoleic acid
metabolism and, 505,
516, 521, 523
- El Salvador
malnutrition and poverty,
249
- Embryonic development
vitamin A in reproduction
and, 347–69
- Emulsification
phytosterols and, 533
- Energy homeostasis
anorexia of aging and,
417–29
genetically lean mice and,
459–76
- Enterobacter* spp.
pre- and probiotics, 110,
120
- Enterococcus faecium*
pre- and probiotics, 113,
117–20
- Enterocytes
urea cycle and arginine
metabolism, 87
- Epicatechin
dietary flavonoids and, 19,
22, 26
- Erythromycin
pre- and probiotics, 117
- Escherichia coli*
conjugated linoleic acid
metabolism and, 515
fatty acid transport across
membranes and, 390
host-microbial interactions
in gut and, 285
pre- and probiotics, 110,
112, 119–20, 122
- Esterification
phytosterols and, 533,
536–38, 541–42
- Estradiol
dietary flavonoids and, 27
nitric oxide synthesis and
diet, 70–71
- Estrogens
dietary flavonoids and,
26–27
nitric oxide synthesis and
diet, 61, 70–71, 75
- Estrone
dietary flavonoids and, 27
- Ethanol
biotin and, 230
folate metabolism in vivo
kinetics and, 207, 211
- nitric oxide synthesis and
diet, 61, 71–72, 76
- Eubacterium* spp.
host-microbial interactions
in gut and, 298
pre- and probiotics, 114
- Europe
PPAR γ and glucose
homeostasis, 177
- Evolution
ceruloplasmin and, 439
host-microbial interactions
in gut and, 283, 301
- Extracellular water
reference infant body
composition and, 3–4,
8–10
- Ezetimibe
phytosterols and, 543
- F**
- Fasting-induced adipocyte
factor (FIAF)
host-microbial interactions
in gut and, 299
- “Fasting paradigm”
host-microbial interactions
in gut and, 299
- Fat
carotenoid bioavailability
and bioconversion, 493
conjugated linoleic acid
metabolism and, 505,
507–10
helminths and nutritional
impairment, 40, 42, 45
muscle triglyceride and
insulin resistance, 325–41
nitric oxide synthesis and
diet, 67–68
phytosterols and, 533, 543,
545
reference infant body
composition and, 1, 3,
6–9, 12–13
- Fat-free mass
reference infant body

- composition and, 1, 3-8, 10-11, 13
- Fatty acid binding proteins (FABPm)
 - fatty acid transport across membranes and, 383, 390, 404-5
- Fatty acids
 - conjugated linoleic acid metabolism and, 505-25
 - dietary flavonoids and, 26
 - host-microbial interactions in gut and, 295-96
 - muscle triglyceride and insulin resistance, 325-41
 - nitric oxide synthesis and diet, 61, 68-69, 73-74
 - phytosterols and, 533, 536-38, 543, 545
 - PPAR γ and glucose homeostasis, 182
 - transport across membranes and
 - adipose tissue, 391-402
 - biochemical evidence for LCFA transport, 388-89
 - CD36, 391-402
 - cellular uptake, 385-90
 - conclusions, 405-6
 - determinants, 385-86
 - diabetes, 399-400
 - fatty acid transport protein family, 402-4
 - heart, 391-402
 - insulin resistance, 399-400
 - introduction, 384-85
 - membrane fatty binding protein, 404-5
 - perspectives, 405-6
 - skeletal muscle, 391-402
 - transport and diffusion, 385-90
 - "Fatty acid steal"
- PPAR γ and glucose homeostasis, 173
- Fatty acid translocase
 - fatty acid transport across membranes and, 383
- Fatty acid transport proteins (FATP)
 - fatty acid transport across membranes and, 383, 390, 402-4
- Fenofibrate
 - PPAR γ and glucose homeostasis, 182
- Fermentation products
 - host-microbial interactions in gut and, 295-97
- Ferroxidase
 - serum
 - ceruloplasmin and, 439-52
- Ferulate ester
 - phytosterols and, 538
- Fetal development
 - helminths and nutritional impairment, 35, 42
- Fiber
 - carotenoid bioavailability and bioconversion, 493
 - dietary flavonoids and, 24
 - helminths and nutritional impairment, 40
- Finland
 - dietary flavonoids and, 28-30
- Fisetin
 - dietary flavonoids and, 25
- Flavanols
 - dietary flavonoids and, 19, 25
- Flavanones
 - dietary flavonoids and, 19, 21-23, 27-28
- Flavones
 - dietary flavonoids and, 19, 21-23, 25, 27-28, 30
- Flavonoids
 - dietary
- absorption, 23-24
- antiestrogenic/estrogenic properties, 26-27
- antioxidant activity, 24-26
- antiproliferative activity, 27-28
- bioavailability, 23-24
- cancer, 29-31
- cardiovascular disease, 28-29
- cerebrovascular disease, 28-29
- food sources, 21-22
- health effects, 28-31
- intake, 21, 23
- introduction, 20-23
- metabolic effects, 24-28
- observational studies, 28-31
- overview, 20
- structure/subclasses, 20-21
- summary, 31
- nitric oxide synthesis and diet, 71
- Flavonols
 - dietary flavonoids and, 19, 21-25, 27-28, 30
- Flavor
 - dietary flavonoids and, 19
- FMOC-L-leucine (F-F-Leu)
 - PPAR γ and glucose homeostasis, 181-83
- Folate
 - diet and genome methylation, 268-69
 - helminths and nutritional impairment, 42, 49
 - in vivo kinetics of metabolism
 - current understanding, 206-10
 - determining folate requirements, 214-15
 - experimental

- approaches, 202-6
 health, 200-11
 interpretation issues, 212
 introduction, 200-2
 issues, 210-14
 kinetically-based
 diagnostic techniques, 212, 214
 long-term kinetics, 207-10
 modeling, 212, 215
 one-carbon metabolism modeling, 215
 overview, 200-2
 physiology, 201-2
 priorities, 210-14
 radioisotopic studies, 203-4
 short-term kinetics, 206-7
 stable-isotopic studies, 204-6
 summary, 214-15
 turnover mechanisms, 211
 unlabeled folates, 203
- Folic acid**
 diet and genome methylation, 255-74
 host-microbial interactions in gut and, 298
 nitric oxide synthesis and diet, 69
- Food and Drug Administration (FDA)**
 PPAR γ and glucose homeostasis, 177-78
 pre- and probiotics, 107, 110, 128
- Food intake**
 anorexia of aging and, 417-29
 genetically lean mice and, 459-76
 helminths and nutritional impairment, 35, 44-45
- Food matrix**
 carotenoid bioavailability and bioconversion, 483, 490-92
- Food processing**
 carotenoid bioavailability and bioconversion, 491
- Food supplementation programs**
 malnutrition and poverty, 250
- Food supplements**
 pre- and probiotics, 107-28
- 5-FormylTHF**
 folate metabolism in vivo kinetics and, 210-11
- Four-electron reduction**
 ceruloplasmin and, 439-52
- France**
 nitric oxide synthesis and diet, 71
 pre- and probiotics, 114
- Free radicals**
 dietary flavonoids and, 19-20, 25-26
 nitric oxide synthesis and diet, 61-76
- "French paradox"**
 nitric oxide synthesis and diet, 71
- Fructooligosaccharides (FOS)**
 host-microbial interactions in gut and, 300
 pre- and probiotics, 114-15, 124-25, 127
- Fructose**
 nitric oxide synthesis and diet, 61, 67
- Fruits**
 dietary flavonoids and, 19, 21, 24, 30-31
- fucR* mutant
 host-microbial interactions in gut and, 293-95
- Fusobacterium* spp.
 host-microbial interactions in gut and, 298
- FUT genes**
 host-microbial interactions in gut and, 295
- G**
- Gallocatechin**
 dietary flavonoids and, 19, 22
- Gastrointestinal organisms**
 pre- and probiotics, 107-28
- Gastrointestinal stimuli**
 anorexia of aging and, 420-21
- Gastrointestinal tract**
 host-microbial interactions in gut and, 283-301
 vitamin D hydroxylase enzymes and, 152, 155-56
- Gender**
 genetically lean mice and, 466-67
 reference infant body composition and, 1-14
- Gene expression**
 conjugated linoleic acid metabolism and, 505
 host-microbial interactions in gut and, 283-301
- Gene induction**
 PPAR γ and glucose homeostasis, 171-73, 175-76
- Gene regulation**
 biotin and, 221-32
 diet and genome methylation, 255-74
- Genetically lean mice**
 abnormal adipocyte biochemistry, 473-74
 age, 466-67
 ambient temperature, 466-67
 background genotype, 466-67
 central nervous system-mediated lean mice, 471-72

- conclusions, 475–76
 diet, 466–67
 energy homeostasis physiology, 460–61
 experimental assessment of altered adiposity and its causes, 465–67
 increased energy expenditure via multiple or unknown tissues, 469–71
 measuring adiposity, 465
 peripherally-decreased energy availability, 472–73
 peripherally-driven increased energy expenditure
 adipose tissue, 468–69
 muscle, 467–68
 scaling measurements to body weight, 465–66
 sex, 466–67
 special cases: confusing or insufficient information, 473
 specific examples, 467–75
 types of lean mice, 461–65
 white adipose tissue ablation, 474–75
- Genetic diseases
 vitamin D hydroxylase enzymes and, 139, 146–49
- Genistein
 dietary flavonoids and, 19, 22, 24, 28, 31
 nitric oxide synthesis and diet, 71
- Genomics
 diet and genome methylation, 255–74
 vitamin D hydroxylase enzymes and, 139, 150
- Geriatrics
 sarcopenia, nutritional frailty, and weight loss in the elderly, 309–18
- Germ-free mice
 host-microbial interactions in gut and, 283, 286, 301
- Ghana
 helminths and nutritional impairment, 36
- Globalization
 malnutrition and poverty, 241–51
- Glucagon
 urea cycle and arginine metabolism, 87, 89
- Glucocorticoids
 urea cycle and arginine metabolism, 87, 89–90, 92–93, 96
- Glucosamine
 nitric oxide synthesis and diet, 70, 75–76
- Glucose
 homeostasis
 PPAR γ and, 167–83
 nitric oxide synthesis and diet, 61, 66–67
 α -Glucosidase inhibitors
 PPAR γ and glucose homeostasis, 177
- GLUT4 glucose transporter
 PPAR γ and glucose homeostasis, 175–76
- Glutamate
 urea cycle and arginine metabolism, 87
- Glutathione-S-transferase
 dietary flavonoids and, 25
- Glycans
 host-microbial interactions in gut and, 290–95
- Glycosides
 dietary flavonoids and, 19, 20, 23–24
 phytosterols and, 538
- Glycosphingolipids
 host-microbial interactions in gut and, 291
- Gnotobiotic mice
 host-microbial interactions in gut and, 283, 286, 301
- Growth
 helminths and nutritional impairment, 35–53
 malnutrition and poverty, 243–44
 reference infant body composition and, 1–14
 vitamin D hydroxylase enzymes and, 139–57
- Growth hormone
 sarcopenia, nutritional frailty, and weight loss in the elderly, 317
- Guatemala
 malnutrition and poverty, 248
- GW0072
 PPAR γ and glucose homeostasis, 181
- H**
- Haiti
 malnutrition and poverty, 248
- Health-promoting effects
 biotin and, 221–32
 conjugated linoleic acid metabolism and, 505–25
 folate metabolism in vivo kinetics and, 200, 210–11
 pre- and probiotics, 111–15
 vitamin D hydroxylase enzymes and, 146–49
- Health and development
 issues
 malnutrition and poverty, 241–51
- Heart
 fatty acid transport across membranes and, 391–402
- Helicobacter pylori*
 pre- and probiotics, 107, 109, 119
- Helminthiasis
 intestinal

- absorption, 45-46
 animal models, 39-40
 ascariasis, 43
 child growth, 43-44,
 46-47
 conclusions, 52-53
 control and management
 of nutritional impact,
 51-52
 digestion, 45-46
 evidence for nutritional
 impairment, 40-51
 food intake, 44-45
 helminth biology, 38
 hookworm disease,
 47-48
 human biology, 38-39
 introduction, 36-38
 iron deficiency, 47
 maternal well-being,
 48-49
 pregnancy, 48-49
 school performance, 47,
 50-51
 trichuriasis, 47
Trichuris trichiura, 46
 worker productivity, 51
- Heparin
 host-microbial interactions
 in gut and, 290-91
- Hesperidin
 dietary flavonoids and, 19,
 22, 27
- Heterodimerization
 PPAR γ and glucose
 homeostasis, 167-83
 vitamin D hydroxylase
 enzymes and, 139-57
- Heterozygous knockout mice
 PPAR γ and glucose
 homeostasis, 167, 173-74
- High-density lipoprotein
 (HDL)
 phytosterols and, 540
 PPAR γ and glucose
 homeostasis, 182
 pre- and probiotics, 112
- Hispanics
 malnutrition and poverty,
 249
- Histones
 diet and genome
 methylation, 259
- Homeostasis
 amino acid
 host-microbial
 interactions in gut and,
 297-98
 calcium
 vitamin D hydroxylase
 enzymes and, 139, 146
 energy
 genetically lean mice
 and, 459-76
 glucose
 PPAR γ and, 167-83
- Homeostatic reserve
 sarcopenia, nutritional
 frailty, and weight loss in
 the elderly, 309-18
- Homocysteine
 diet and genome
 methylation, 255-74
 folate metabolism in vivo
 kinetics and, 199-215
- Honduras
 malnutrition and poverty,
 248
- Hookworm disease
 helminths and nutritional
 impairment, 35-53
- Hormones
 dietary flavonoids and,
 26-27
 sarcopenia, nutritional
 frailty, and weight loss in
 the elderly, 317
 vitamin D hydroxylase
 enzymes and, 139-57
- Host-microbial interactions
 in gut
 amino acid homeostasis,
 297-98
 carbohydrate
 metabolism, 287-98
 future research, 300-1
 germ-free mice, 286
 glycan degradation,
 290-92
 glycan induction,
 292-95
 host-microbe nutrient
 exchange, 286-87
 host utilization of
 microbial fermentation
 products, 295-97
 introduction, 284
 manipulating microbial
 community through
 diet, 300
 microbial ecology of GI
 tract, 284-85
 microbial manipulations
 of host metabolic
 machinery, 298-99
 prebiotics and
 probiotics, 300
 starch degradation,
 287-90
 vitamin synthesis, 298
- Hyaluronate
 host-microbial interactions
 in gut and, 290-91
- Hydroxylases
 vitamin D hydroxylase
 enzymes and, 139-57
- 1,25-Hydroxyvitamin D
 phytosterols and, 540
 vitamin D hydroxylase
 enzymes and, 139-57
- Hypothalamic neuropeptides
 anorexia of aging and,
 425-28
- I**
- ICF syndrome
 diet and genome
 methylation, 272
- Immune response
 nitric oxide synthesis and
 diet, 61

- pre- and probiotics, 107, 111–12
sarcopenia, nutritional frailty, and weight loss in the elderly, 317–18
vitamin D hydroxylase enzymes and, 139, 148
- Imprinting disorders
diet and genome methylation, 272–73
- India
helminths and nutritional impairment, 36
- Indonesia
helminths and nutritional impairment, 36, 45, 52
- Inducible synthesis
nitric oxide synthesis and diet, 72–76
- Industrialized countries
malnutrition and poverty, 241–51
- Inequities and health
malnutrition and poverty, 241–51
- Infancy
reference infant body composition and, 1–14
- Inflammatory bowel disease
biotin and, 229–30
pre- and probiotics, 107, 122–23
- Insulin
anorexia of aging and, 424–25
urea cycle and arginine metabolism, 87, 89
- Insulin resistance
conjugated linoleic acid metabolism and, 507, 511
fatty acid transport across membranes and, 399–400
genetically lean mice and, 459–76
muscle triglyceride and, 325–41
PPAR γ and glucose homeostasis, 167–83
- Interferon (IFN)
pre- and probiotics, 107, 111, 123
- Interferon γ (IFN γ)
vitamin D hydroxylase enzymes and, 139
- Intestinal-renal axis
urea cycle and arginine metabolism, 92–93
- Intestines
helminths and nutritional impairment, 35–53
host-microbial interactions in gut and, 283–301
pre- and probiotics, 107–28
vitamin D hydroxylase enzymes and, 152, 155–56
- Intrauterine growth retardation
malnutrition and poverty, 243–44
- Inulin
host-microbial interactions in gut and, 300
pre- and probiotics, 124, 127
- Iowa
dietary flavonoids and, 29
- Iron
ceruloplasmin and, 439–52
- Iron deficiency
helminths and nutritional impairment, 35, 42, 47–51
- IRS proteins
PPAR γ and glucose homeostasis, 175
- Ischemic heart disease
dietary flavonoids and, 29
- Isoflavanones
dietary flavonoids and, 28
- Isoflavones
dietary flavonoids and, 19, 21–22, 24–25, 27
- Isotopic techniques
carotenoid bioavailability and bioconversion, 496–97
folate metabolism in vivo kinetics and, 199, 202–6, 214
- Ivory Coast
helminths and nutritional impairment, 49
- J**
- Jamaica
helminths and nutritional impairment, 47
malnutrition and poverty, 248
- Japan
ceruloplasmin and, 446
dietary flavonoids and, 24
pre- and probiotics, 114
- JTT-501
PPAR γ and glucose homeostasis, 182
- K**
- K⁺
reference infant body composition and, 4, 8–14
- Kaempferol
dietary flavonoids and, 21–22, 27
- Kenya
helminths and nutritional impairment, 36, 50
- Kidneys
folate metabolism in vivo kinetics and, 202, 208
urea cycle and arginine metabolism, 92–93, 95
vitamin D hydroxylase enzymes and, 139–57
- Kinetically-based diagnostic techniques
folate metabolism in vivo kinetics and, 212, 214
- Kinetics
in vivo

- folate metabolism and, 199–215
- Klebsiella* spp.
pre- and probiotics, 120
- Knockouts
PPAR γ and glucose homeostasis, 167, 173–74
- KRP-297
PPAR γ and glucose homeostasis, 182
- L**
- Lactation
conjugated linoleic acid metabolism and, 524–25
helminths and nutritional impairment, 42
- Lactobacillus* spp.
folate metabolism in vivo kinetics and, 207
host-microbial interactions in gut and, 300
pre- and probiotics, 107, 110–12, 114–23
- Lactose
helminths and nutritional impairment, 39, 42, 45
- Lamb
conjugated linoleic acid metabolism and, 505
- Laser capture microdissection
host-microbial interactions in gut and, 298
- Late embryonic death in
vitamin A deficiency
vitamin A in reproduction and embryonic development, 354
- Latin America
malnutrition and poverty, 245–46, 248–49
- “Leaking down” process
of economic growth
malnutrition and poverty, 250
- Lean body mass
sarcopenia, nutritional frailty, and weight loss in the elderly, 309–18
- Lecithin
phytosterols and, 533
- Leptin
anorexia of aging and, 417, 423–24
conjugated linoleic acid metabolism and, 507
genetically lean mice and, 459–76
muscle triglyceride and insulin resistance, 331
PPAR γ and glucose homeostasis, 174
- Leucocyanidol
nitric oxide synthesis and diet, 71
- LG100641
PPAR γ and glucose homeostasis, 181
- Life cycle
human
helminths and nutritional impairment, 35–53
- Light microscopy
muscle triglyceride and insulin resistance, 328
- Lipids
conjugated linoleic acid metabolism and, 505–25
fatty acid transport across membranes and, 383–46
muscle triglyceride and insulin resistance, 325–41
PPAR γ and glucose homeostasis, 167–83
pre- and probiotics, 107
reference infant body composition and, 6
- Lipoatrophy/lipodystrophy
genetically lean mice and, 459–76
- Lipopolysaccharide (LPS)
vitamin D hydroxylase enzymes and, 155
- Lipoproteins
phytosterols and, 533, 536
Listeria monocytogenes
pre- and probiotics, 110
- Liver
conjugated linoleic acid metabolism and, 507, 517–23
folate metabolism in vivo kinetics and, 201, 212
genetically lean mice and, 459–76
host-microbial interactions in gut and, 296–97
PPAR γ and glucose homeostasis, 177–79
urea cycle and arginine metabolism, 87–98
vitamin D hydroxylase enzymes and, 152
- Long-chain fatty acids (LCFAs)
fatty acid transport across membranes and, 383–46
phytosterols and, 533, 536–38
- Long-term kinetics
folate metabolism in vivo kinetics and, 207–10
- Long-term regulators
anorexia of aging and, 423–28
- Loperimide
pre- and probiotics, 117
- Loss-of-function mutations
ceruloplasmin and, 439, 446–47
- Low-density lipoprotein (LDL)
nitric oxide synthesis and diet, 67–68, 73
phytosterols and, 533, 540–44
PPAR γ and glucose homeostasis, 179
pre- and probiotics, 112–13
- Luteolin

- dietary flavonoids and, 19, 21–22
- Lycopene
 - phytosterols and, 540
- M**
- Maasai
 - pre- and probiotics, 112
- Macrophages
 - pre- and probiotics, 111, 121
 - urea cycle and arginine metabolism, 87, 95–96
 - vitamin D hydroxylase enzymes and, 155–57
- Macular pigment density measurement
 - carotenoid bioavailability and bioconversion, 497
- Magnesium
 - reference infant body composition and, 4
- Malabsorption
 - helminths and nutritional impairment, 35, 40, 43, 45–46
- Male and female reference infants
 - body composition and
 - 1966 male reference infant, 4–7
 - 1967 male reference infant, 7–8
 - 1982 male and female reference infants, 8–11
 - 2000 reference infants, 13–14
 - Butte et al. reference subjects: birth to age 2 years, 11–13
 - chemical maturation of fat-free mass, 4
 - chloride, 4
 - extracellular water, 3
 - introduction, 2–3
 - magnesium, 4
 - maturation of fat-free mass model, 5–7
 - peripheral adipose tissue, 4
 - phosphorus, 4
 - potassium, 4
 - sodium, 4
 - total body water, 3
 - whole-body chemical analyses, 3, 5–6, 9
- Malnutrition
 - poverty and, 241–51
 - sarcopenia, nutritional frailty, and weight loss in the elderly, 309–18
- Malvidin
 - dietary flavonoids and, 22
- Mammals
 - host-microbial interactions in gut and, 283–301
- Margarine
 - phytosterols and, 533, 541
- Maternal well-being
 - helminths and nutritional impairment, 48–49
- Maternal/fetal transport
 - vitamin A in reproduction and embryonic development, 353–54
- MCC-555
 - PPAR γ and glucose homeostasis, 181
- MCF-7 breast cancer cells
 - nitric oxide synthesis and diet, 75
- Mebendazole
 - helminths and nutritional impairment, 44
- Megestrol acetate
 - sarcopenia, nutritional frailty, and weight loss in the elderly, 318
- Membrane transport
 - fatty acid transport across membranes and, 383–46
- Memory
 - diet and genome methylation, 268
- Mental function
 - diet and genome methylation, 267–68
- Mesalamine
 - pre- and probiotics, 122–23
- Mesorhizobium* spp.
 - host-microbial interactions in gut and, 286
- Metabolism
 - arginine
 - urea cycle and, 87–98
 - biotin
 - molecular biology and, 221–32
 - carotenoid bioavailability and bioconversion, 483–98
 - ceruloplasmin and, 439–52
 - conjugated linoleic acid metabolism and, 505–25
 - dietary flavonoids and, 24–28
 - fatty acid transport across membranes and, 383–46
 - folate
 - in vivo kinetics and, 199–215
 - genetically lean mice and, 459–76
 - host-microbial interactions in gut and, 283–301
 - lipid
 - pre- and probiotics, 107
 - muscle triglyceride and insulin resistance, 325–41
 - sarcopenia, nutritional frailty, and weight loss in the elderly, 309–18
 - vitamin D hydroxylase enzymes and, 139–57
- Metabolon
 - urea cycle and arginine metabolism, 97
- Metformin
 - PPAR γ and glucose homeostasis, 178–79
- Methionine

- diet and genome
methylation, 263–64
- Methionine synthase/
methionine synthase
reductase
polymorphisms
- diet and genome
methylation, 265
- Methylation diets
genetic effects of
active DNA
demethylation, 259
S-adenosylhomocysteine,
264
S-adenosylmethionine,
264
adequacy of dietary
recommendations,
273–74
aging, 267
betaine, 263
biology, 257–60
birth defects, 269–70
cancer, 265–66
cardiovascular disease,
267
choline, 263
conclusions, 273–74
depression, 267–68
disease, 265–71
DNA methylation
patterns, 257
exogenous agents,
262–64
folic acid and its
derivatives, 262–63
future research, 273–74
genetic defects, 264–65
histone modifications,
259
homocysteine, 264
human aneuploidy, 270
ICF syndrome, 272
imprinting disorders,
272–73
inherited disorders of
B₁₂ and folate
metabolism, 268–69
introduction, 256–57
long-term effects,
270–71
memory, 268
mental function, 267–68
metabolic pathways,
260–62
methionine, 263–64
methionine synthase
polymorphisms, 265
methionine synthase
reductase
polymorphisms, 265
methylation enzymes,
257
methyl-CpG-binding
proteins, 258
methyl folate trap
hypothesis, 264
methylcobalamin, 263
MTHFR
polymorphisms, 265
neural tube defects,
269–70
psychiatric disorders,
267–68
regulation of
developmental gene
expression, 270–71
Rett syndrome, 272
specific disorders,
272–73
transcription, 258
vitamin B₁₂, 263
- Methylcobalamin
diet and genome
methylation, 263
- Methyl folate trap hypothesis
diet and genome
methylation, 264
folate metabolism in vivo
kinetics and, 207
- 5-Methyltetrahydrofolate
(5MTHF)
diet and genome
methylation, 260–62
- folate metabolism in vivo
kinetics and, 201–3
- Mexican Americans
malnutrition and poverty,
249
- Mexico
helminths and nutritional
impairment, 36
malnutrition and poverty,
248
- Mg²⁺
reference infant body
composition and, 4
- Micelles
phytosterols and, 543–44
- Microbial ecology
host-microbial interactions
in gut and, 283–301
- Minerals
nitric oxide synthesis and
diet, 61, 69–70, 75
pre- and probiotics,
125–26
reference infant body
composition and, 1, 5,
7–8, 10–11, 14
- Mitochondria
folate metabolism in vivo
kinetics and, 214
PPAR γ and glucose
homeostasis, 179
urea cycle and arginine
metabolism, 87
vitamin D hydroxylase
enzymes and, 152
- Mitogen-activated protein
kinases (MAPKs)
vitamin D hydroxylase
enzymes and, 139,
150–51, 153
- MTHFR polymorphisms
diet and genome
methylation, 265
- Mucin
host-microbial interactions
in gut and, 290
- Multicopper oxidases

- ceruloplasmin and, 439–52
- Multi-sectoral action
- malnutrition and poverty, 250
- Muscle
- conjugated linoleic acid metabolism and, 524
 - fatty acid transport across membranes and, 391–402
 - genetically lean mice and, 467–68
 - PPAR γ and glucose homeostasis, 174–76, 181
 - triglyceride and insulin resistance, 325–41
- Myanmar
- helminths and nutritional impairment, 36
- Mycobacterium tuberculosis*
- nitric oxide synthesis and diet, 74
- Myricetin
- dietary flavonoids and, 19, 21–22, 25
- N**
- Na⁺
- reference infant body composition and, 4
- Naringenin
- dietary flavonoids and, 19, 22, 24, 27
- Natural diet
- phytosterols and, 542–45
- NC-2100
- PPAR γ and glucose homeostasis, 181
- Necator americanus*
- helminths and nutritional impairment, 37, 48, 50
- Necrotizing enterocolitis
- pre- and probiotics, 107, 119–20
- Nematodes
- helminths and nutritional impairment, 35–53
- Neoliberalism
- malnutrition and poverty, 241–51
- Neonates
- malnutrition and poverty, 243–44
- Netherlands
- dietary flavonoids and, 23, 30
 - pre- and probiotics, 114
- Neural tube defects
- diet and genome methylation, 255, 257, 269–70
- Neurodegenerative disease
- ceruloplasmin and, 439–52
- Neuropeptide Y (NPY)
- anorexia of aging and, 417, 425–28
- Neurotransmitters
- nitric oxide synthesis and diet, 61–76
- Nigeria
- helminths and nutritional impairment, 36, 49, 51
- Nitric oxide (NO)
- PPAR γ and glucose homeostasis, 175
 - regulation of synthesis by dietary factors
 - amino acids, 64–66, 72
 - carbohydrates, 66–67, 73
 - cholesterol, 67–68, 73 - constitutive NO synthesis, 64–72
 - ethanol, 71–72, 76
 - future research, 76
 - glucosamine, 70, 75–76
 - inducible NO synthesis, 72–76
 - introduction, 62
 - low-density lipoprotein, 67–68, 73
 - mammalian cells, 62–63
 - minerals, 69–70, 75
 - NOS isoforms, 62–63
 - perspectives, 76
 - phytoestrogens, 70–71, 75
 - polyphenols, 71–72, 76
 - protein, 64–66, 72
 - saturated fats, 67–68
 - saturated fatty acids, 73
 - sphingolipids, 68–69, 73–74
 - unsaturated fatty acids, 68–69, 73–74
 - vitamins, 69, 74
 - whole-body synthesis, 63
 - urea cycle and arginine metabolism, 87
- Noninvasive imaging
- muscle triglyceride and insulin resistance, 327
- Norepinephrine
- anorexia of aging and, 428
- Northern Africa
- malnutrition and poverty, 245
- NO synthase
- nitric oxide synthesis and diet, 61–64, 69–70, 72–76
 - urea cycle and arginine metabolism, 93–95
- Nuclear receptors
- PPAR γ and glucose homeostasis, 167–83
- Nutritional frailty
- sarcopenia, and weight loss in the elderly, 309–18
- O**
- Obesity
- malnutrition and poverty, 241
 - muscle triglyceride and insulin resistance, 325–41
 - nutrition and poverty, 247–49
- Observational studies
- dietary flavonoids and, 28–31
- Octadecadienoate

- conjugated linoleic acid metabolism and, 505, 517-18
- Oligofructose
 host-microbial interactions in gut and, 300
- Omega-3 fatty acids
 sarcopenia, nutritional frailty, and weight loss in the elderly, 318
- One-carbon metabolism
 folate metabolism in vivo kinetics and, 199-215
- Opioids
 anorexia of aging and, 421-22
- Oral-fecal balance technique
 carotenoid bioavailability and bioconversion, 496
- Ornithine
 urea cycle and arginine metabolism, 87-91
- Oronasal stimuli
 anorexia of aging and, 420-21
- Osseous mineral content
 reference infant body composition and, 1, 8, 10-14
- Osteoblasts
 vitamin D hydroxylase enzymes and, 156
- β -Oxidation
 conjugated linoleic acid metabolism and, 505, 516
- Oxygen
 ceruloplasmin and, 439-52
- P**
- P450C1* gene
 vitamin D hydroxylase enzymes and, 139, 148
- P450C24* gene
 vitamin D hydroxylase enzymes and, 139, 149
- Panama
 helminths and nutritional impairment, 36
- Pancreatic β -cells
 PPAR γ and glucose homeostasis, 172, 176-77
- Pantothenate
 host-microbial interactions in gut and, 298
- Parasite infection
 carotenoid bioavailability and bioconversion, 494
- Parathyroid hormone (PTH)
 vitamin D hydroxylase enzymes and, 139, 146, 148, 152-53, 156
- Pathogenicity
 host-microbial interactions in gut and, 286
- Pelargonidin
 dietary flavonoids and, 19, 22
- Pentoxifylline
 sarcopenia, nutritional frailty, and weight loss in the elderly, 317
- Peripheral adipose tissue
 reference infant body composition and, 4
- Peroxisome
 proliferator-activated receptor α (PPAR α)
 conjugated linoleic acid metabolism and, 521-23
- Peroxisome
 proliferator-activated receptor γ (PPAR γ)
 glucose homeostasis and activation and insulin sensitivity, 171-77
 adipogenesis, 171-73
 adipose tissue-derived molecules, 173-75
 antagonists, 181-82
 dual agonists, 182
 gene induction, 171-73, 175-76
 genetic studies, 170-71
 glucose metabolism, 175
 human point mutations, 170-71
 insulin sensitivity, 168-77
 introduction, 168
 liver, 177
 modulators, 181-82
 muscle, 175-76
 nonthiazolidinedione PPAR γ ligands, 180-82
 pancreatic β -cells, 176-77
 perspectives, 182-83
 PPAR γ +/- mice, 170
 remodeling of white adipose tissue, 171-73
 thiazolidinediones, 177-80
 L-tyrosine-based PPAR γ ligands, 180-81
 host-microbial interactions in gut and, 299
- Peru
 malnutrition and poverty, 248
- Phosphate
 vitamin D hydroxylase enzymes and, 139, 154-55
- Phosphatonin
 vitamin D hydroxylase enzymes and, 155
- Phosphoenolpyruvate
 carboxykinase (PEPCK)
 biotin and, 231
- Phospholipids
 conjugated linoleic acid metabolism and, 518-20
 muscle triglyceride and insulin resistance, 325-41
- Phosphorus
 reference infant body composition and, 4
- Phosphorylation

- PPAR γ and glucose
homeostasis, 175
vitamin D hydroxylase
enzymes and, 139, 154
- Phytoestrogens
nitric oxide synthesis and
diet, 61, 70–71, 75
- Phytosterols
absorption, 537–40
future research, 544–45
importance in natural diet,
542–43
low-density lipoprotein
lowering, 540–42
mechanism of action,
543–44
nomenclature, 533–37
occurrence in foods, 537
safety, 537–40
structure, 533–37
- Pioglitazone
PPAR γ and glucose
homeostasis, 177–78
- Pituitary hormones
vitamin D hydroxylase
enzymes and, 139
- Placentation
vitamin A in reproduction
and embryonic
development, 353
- Plant foods
phytosterols and, 533–45
- Plasma membrane
fatty acid transport across
membranes and, 383–46
- Point mutations
PPAR γ and glucose
homeostasis, 170–71,
183
- Polyamines
urea cycle and arginine
metabolism, 87, 96
- Polyphenols
dietary flavonoids and,
19–31
nitric oxide synthesis and
diet, 61, 71–72, 76
- Polysaccharides
complex host-microbial
interactions in gut and,
283–301
- Polyunsaturated fatty acids
(PUFAs)
conjugated linoleic acid
metabolism and, 505–25
- Postabsorptive patterns
muscle triglyceride and
insulin resistance, 337–38
- Postmenopause
dietary flavonoids and, 29
pre- and probiotics, 126
- Potassium
reference infant body
composition and, 4, 8–14
- Poverty
helminths and nutritional
impairment, 35–53
malnutrition and
conceptual issues,
241–43
health implications,
241–43
obesity, 247–49
possible lines of action,
250–51
undernutrition, 243–47
- Pre- and probiotics
host-microbial interactions
in gut and, 300
as protective
gastrointestinal organisms
allergy, 120–22
antibiotic-associated
bacteria, 117–18
bacterial diarrhea,
118–19
cancer prevention,
113–15, 127
cholesterol, 112–13
conclusions, 128
diarrhea, 116–19
disease, 116–23
health-promoting
effects, 111–15
- Helicobacter pylori*, 119
immunomodulation,
111–12
inflammatory bowel
disease, 122–23
introduction, 108–9
mineral absorption,
125–26
necrotizing enterocolitis,
119–20
prebiotics, 123–27
probiotics, 109–23
specific bacteria,
110–11
synbiotics, 127–28
traveler's diarrhea,
118–19
viral diarrhea, 116–17
- Pregnancy
conjugated linoleic acid
metabolism and, 524
folate metabolism in vivo
kinetics and, 199,
209–211
helminths and nutritional
impairment, 35, 42,
48–49
malnutrition and poverty,
243–44
- Prevention
malnutrition and poverty,
250
- Probiotics
host-microbial interactions
in gut and, 300
nutritional impact of,
107–28
- Progressive resistance
training
sarcopenia, nutritional
frailty, and weight loss in
the elderly, 317
- Proline
urea cycle and arginine
metabolism, 87
- Propionate
host-microbial interactions

- in gut and, 296-97
Propionibacterium spp.
 host-microbial interactions
 in gut and, 298
- Protein**
 helminths and nutritional
 impairment, 42
 nitric oxide synthesis and
 diet, 61, 64-66, 72
 reference infant body
 composition and, 1, 5-11,
 14
- Protein kinase A (PKA)**
 vitamin D hydroxylase
 enzymes and, 139, 152
- Protein kinase C (PKC)**
 vitamin D hydroxylase
 enzymes and, 139,
 150-51, 153
- Pseudomonas* spp.
 pre- and probiotics, 110
- Psychiatric disorders**
 diet and genome
 methylation, 267-68
- Public policy**
 malnutrition and poverty,
 250
- Pyridoxine**
 folate metabolism in vivo
 kinetics and, 214
- Pyruvate dehydrogenase**
 kinase 4 (PDK4)
 PPAR γ and glucose
 homeostasis, 176
- Q**
- Quercetin**
 dietary flavonoids and, 19,
 21-26, 29, 31
 nitric oxide synthesis and
 diet, 71
- R**
- Radioisotopic studies**
 folate metabolism in vivo
 kinetics and, 203-4, 214
ras-p21 oncogene
 pre- and probiotics, 114
- Reactive oxygen species**
 dietary flavonoids and, 24,
 25
- Real-time quantitative reverse
 transcriptase PCR
 (qRT-PCR)**
 host-microbial interactions
 in gut and, 298
- Receptors**
 PPAR γ and glucose
 homeostasis, 167-83
 vitamin A in reproduction
 and embryonic
 development, 347-69
 vitamin D hydroxylase
 enzymes and, 139-57
- Recommended Daily
 Allowance (RDA)**
 folate metabolism in vivo
 kinetics and, 208
- Reference infants**
 male and female
 body composition and,
 1-14
- Remodeling**
 white adipose tissue
 PPAR γ and glucose
 homeostasis, 171-73
- Reproduction**
 mammalian
 vitamin A in embryonic
 development and,
 347-69
- Resistin**
 PPAR γ and glucose
 homeostasis, 174
- Resveratrol**
 nitric oxide synthesis and
 diet, 71
- Retinaldehyde dehydrogenase**
 type 2 null mutant mice
 vitamin A in reproduction
 and embryonic
 development, 347,
 365-67
- Retinoic acid**
 vitamin A in reproduction
 and embryonic
 development, 347-69
- Retinoid-binding proteins**
 vitamin A in reproduction
 and embryonic
 development, 351-52
- Retinoid receptor (RXR)**
 PPAR γ and glucose
 homeostasis, 167, 181
 vitamin A in reproduction
 and embryonic
 development, 365
 vitamin D hydroxylase
 enzymes and, 139, 150,
 154
- Retinol**
 phytosterols and, 540
 vitamin A in reproduction
 and embryonic
 development, 347-69
- Rett syndrome**
 diet and genome
 methylation, 255, 257,
 272
- Rezulin**
 PPAR γ and glucose
 homeostasis, 177-82
- Rhizobium* spp.
 host-microbial interactions
 in gut and, 286
- Riboflavin**
 folate metabolism in vivo
 kinetics and, 211
- Rosiglitazone**
 PPAR γ and glucose
 homeostasis, 177-182
- 16S-rRNA**
 host-microbial interactions
 in gut and, 300
- Ruminococcus* spp.
 host-microbial interactions
 in gut and, 286, 291
- Rutin**
 dietary flavonoids and, 26
- Rutinoside**
 dietary flavonoids and, 23

- S**
- Saccharomyces* spp.
ceruloplasmin and, 444
pre- and probiotics,
109–12, 118, 123
- Salmonella* spp.
pre- and probiotics, 110
- Sarcopenia
weight loss and nutritional
frailty in the elderly
aging, 310
anabolic interventions,
317
body composition, 310
causes of frailty and
functional decline,
311–14
cytokine activation,
313–18
food intake, 310
immune function,
317–18
increasing food intake,
314–16
interventions, 314–18
natural course of
problem, 310–11
prevalence of problem,
310–11
progressive resistance
training, 317
sarcopenia, 312–13, 317
summary, 318
unintentional weight
loss, 311–12
- Saturated fats
dietary flavonoids and, 29
nitric oxide synthesis and
diet, 67–68
- Saturated fatty acids
nitric oxide synthesis and
diet, 73
- School performance
helminths and nutritional
impairment, 42, 47, 50–51
- Secosteroids
vitamin D hydroxylase
enzymes and, 139–57
- Serum/plasma response
carotenoid bioavailability
and bioconversion, 495
- Seven Countries Study
dietary flavonoids and,
29–30
- Short-chain fatty acids
(SCFAs)
host-microbial interactions
in gut and, 295–97
- Short-term kinetics
folate metabolism in vivo
kinetics and, 206–7
- Short-term regulators
anorexia of aging and,
420–23
- Sierra Leone
helminths and nutritional
impairment, 36, 49
- Signal transduction
muscle triglyceride and
insulin resistance, 335
nitric oxide synthesis and
diet, 61–76
- Sitostanol
phytosterols and, 533, 535,
539–40
- Sitosterol
phytosterols and, 533–34,
537, 542, 544
- Skeletal muscle
fatty acid transport across
membranes and, 391–402
triglyceride content and
insulin resistance
conclusions, 340–41
factors controlling
intramyocellular
triglyceride stores,
329–31
introduction, 326
leptin, 331
lipid signaling in
obesity, 335–37
markers of capacity of
fatty acid oxidation in
obesity and type 2
diabetes, 333–35
metabolic inflexibility of
substrate utilization in
obesity, 338–40
microscopy, 328
muscle fiber type,
331–33
noninvasive imaging,
327
postabsorptive patterns
of fatty acid use,
337–38
regional adipose tissue
distribution adjacent to
skeletal muscle,
327–28
structural and storage
lipid subtypes in
obesity, 335–37
summary, 340–41
- Smoking
dietary flavonoids and, 29
folate metabolism in vivo
kinetics and, 211
- SMVT1 protein
biotin and, 226–27
- Sodium
reference infant body
composition and, 4
- Soil-transmitted nematodes
helminths and nutritional
impairment, 35, 50–52
- South America
malnutrition and poverty,
245
- South Asia
helminths and nutritional
impairment, 51
- South-central Asia
malnutrition and poverty,
245
- Southeast Asia
helminths and nutritional
impairment, 48
malnutrition and poverty,
245

- Sphingolipids
nitric oxide synthesis and diet, 68–69, 73–74
- Sri Lanka
helminths and nutritional impairment, 49
- Stable-isotopic studies
carotenoid bioavailability and bioconversion, 496–97
folate metabolism in vivo kinetics and, 204–6, 214
- Stanols
phytosterols and, 533, 535, 537, 539–41
- Staphylococcus* spp.
pre- and probiotics, 110, 119
- Starch
host-microbial interactions in gut and, 287–90
- Steroids
dietary flavonoids and, 27
vitamin D hydroxylase enzymes and, 139–57
- Sterols
phytosterols and, 533–34, 536–40
- Stigmasterol
phytosterols and, 534, 536, 542
- Streptococcus* spp.
folate metabolism in vivo kinetics and, 206–7
pre- and probiotics, 110–16, 123
- Streptozotocin
PPAR γ and glucose homeostasis, 169
- Stroke
dietary flavonoids and, 29
- Strongyloides stercoralis*
helminths and nutritional impairment, 43
- “Stunting”
malnutrition and poverty, 244
- Sub-Saharan Africa
helminths and nutritional impairment, 48
- Substrate utilization
muscle triglyceride and insulin resistance, 338–40
- Sulfonylurea
PPAR γ and glucose homeostasis, 178–79
- sus* mutants
host-microbial interactions in gut and, 289–90
- Symbiodinium* spp.
host-microbial interactions in gut and, 286
- Symbiosis
host-microbial interactions in gut and, 283–301
- Synbiotics
pre- and probiotics, 127–28
- T**
- Tannic acid
nitric oxide synthesis and diet, 71
- Target genes
PPAR γ and glucose homeostasis, 167–83
vitamin D hydroxylase enzymes and, 150–51
- Targeted/general approaches
malnutrition and poverty, 250
- Testosterone
dietary flavonoids and, 27
sarcopenia, nutritional frailty, and weight loss in the elderly, 317
- Thalidomide
sarcopenia, nutritional frailty, and weight loss in the elderly, 317
- Thiazolidinediones
conjugated linoleic acid metabolism and, 523
- PPAR γ and glucose homeostasis, 167–68, 177–80
- Total body water
reference infant body composition and, 3–11, 14
- Transcriptional regulation
diet and genome methylation, 258
PPAR γ and glucose homeostasis, 167–83
urea cycle and arginine metabolism, 87, 92, 95, 97
- Transcription factors
vitamin D hydroxylase enzymes and, 139, 150, 152, 154, 156
- Transport
amino acid
urea cycle and arginine metabolism, 87, 89–91, 93–95
biotin and, 221, 225–27
carotenoid bioavailability and bioconversion, 483–86
fatty acid transport across membranes and, 383–46
host-microbial interactions in gut and, 299
vitamin A in reproduction and embryonic development, 353–54
- Traveler's diarrhea
pre- and probiotics, 118–19
- Trichuriasis
helminths and nutritional impairment, 35–53
- Triglycerides
genetically lean mice and, 459–76
intramyocellular
insulin resistance and, 325–41

- phytosterols and, 541
- Troglitazone
 - conjugated linoleic acid metabolism and, 510
 - PPAR γ and glucose homeostasis, 177–79
- Tumor promotion
 - conjugated linoleic acid metabolism and, 513–14
- Turkey
 - pre- and probiotics, 118
- Two-way link
 - malnutrition and poverty, 241–51
- L-Tyrosine-based PPAR γ ligands
 - PPAR γ and glucose homeostasis, 180–81
- U**
- Ulcerative colitis
 - pre- and probiotics, 122
- Undernutrition
 - malnutrition and poverty, 241–51
- Underweight
 - sarcopenia, nutritional frailty, and weight loss in the elderly, 309–18
- UNICEF
 - helminths and nutritional impairment, 51
- Unintentional weight loss
 - sarcopenia, nutritional frailty, and weight loss in the elderly, 309–18
- United Kingdom
 - PPAR γ and glucose homeostasis, 177
- United States
 - conjugated linoleic acid metabolism and, 524
 - dietary flavonoids and, 23, 29
 - folate metabolism in vivo kinetics and, 214
 - malnutrition and poverty, 249
 - PPAR γ and glucose homeostasis, 177
- Unlabeled folates
 - folate metabolism in vivo kinetics and, 203
- Unsaturated fatty acids
 - nitric oxide synthesis and diet, 68–69, 73–74
- Urea cycle
 - arginine metabolism and arginine synthesis, 92–95
 - catabolism, 95–97
 - citrulline-NO cycle, 93–95
 - future research, 97–98
 - intestinal-renal axis, 92–93
 - introduction, 87–89
 - perspectives, 97–98
 - transcriptional regulation, 92
 - ureagenesis and urea cycle enzymes, 89–91
- Uruguay
 - dietary flavonoids and, 30
- V**
- Vegetable oils
 - conjugated linoleic acid metabolism and, 511, 514
 - phytosterols and, 533, 537, 539, 542–43, 545
- Vegetables
 - dietary flavonoids and, 19, 21, 24, 30–31
- Vegetarian diet
 - dietary flavonoids and, 31
- Venezuela
 - helminths and nutritional impairment, 36
- Vibrio cholera*
 - pre- and probiotics, 119
- Viral diarrhea
 - pre- and probiotics, 116–17
- Vitamin A
 - carotenoid bioavailability and bioconversion, 483–98
 - helminths and nutritional impairment, 42–46
 - in reproduction and embryonic development
 - all-*trans* retinoic acid formation, 348–50, 368–69
 - bioactive retinoids, 354–57, 359
 - catabolism, 358–60
 - dominant-negative receptors, 367
 - embryonic development, 354–69
 - excess exogenously administered vitamin A or metabolite, 367–68
 - female reproduction, 350–54
 - historical background, 350
 - introduction, 348
 - late embryonic death in vitamin A deficiency, 354
 - maternal/fetal transport of vitamin A, 353–54
 - maternal vitamin A depletion, 360–65
 - metabolites, 350–51, 354–61
 - overview of metabolism and function, 348–50
 - placenta, 353
 - retinoic acid mechanism of action, 349–50
 - retinoic acid receptor antagonists, 365
 - retinoid-binding proteins, 351–55
 - retinoid presence and synthesis, 352–53

- retinoid receptor null mutant mice, 365-67
 - nitric oxide synthesis and diet, 69
 - phytosterols and, 540
 - Vitamin B₆
 - folate metabolism in vivo kinetics and, 214
 - Vitamin B₁₂
 - diet and genome methylation, 255-74
 - folate metabolism in vivo kinetics and, 199, 206-7
 - helminths and nutritional impairment, 42
 - host-microbial interactions in gut and, 298
 - Vitamin C
 - dietary flavonoids and, 25-26
 - nitric oxide synthesis and diet, 69
 - Vitamin D
 - nitric oxide synthesis and diet, 74
 - phytosterols and, 540
 - vitamin D hydroxylase enzymes and, 139, 147-51, 156
 - Vitamin D hydroxylase
 - enzymes
 - activation of target genes, 150-51
 - analogues, 151
 - calcitonin, 155
 - calcium, 146, 153
 - cancer, 147-48
 - cellular differentiation, 147
 - coactivators, 151
 - conclusions, 157
 - 1,25 dihydroxyvitamin D, 150-51, 154-55
 - future research, 157
 - genomic actions, 150
 - homeostasis, 146
 - 1-hydroxylase (P450C1), 144
 - 24-hydroxylase (P450C24), 144-46
 - 25-hydroxylase (P450C25), 143
 - immune system, 148
 - intestine, 155-56
 - introduction, 140-42
 - lipopolysaccharide, 155
 - macrophages, 156-57
 - nongenomic actions, 150-51
 - nonrenal regulation, 155-57
 - osteoblasts, 156
 - P450C1, 148
 - P450C24, 149
 - P450s and metabolite in health and disease, 146-49
 - parathyroid hormone, 152
 - phosphate, 154-55
 - properties, 142-46
 - renal vitamin D hydroxylases, 152-55
 - Vitamin E
 - dietary flavonoids and, 25-26, 30
 - nitric oxide synthesis and diet, 69
 - Vitamin K
 - phytosterols and, 540
 - nitric oxide synthesis and diet, 74
 - Vitamins
 - biotin and, 221-32
 - folate metabolism in vivo kinetics and, 199-215
 - host-microbial interactions in gut and, 298
 - nitric oxide synthesis and diet, 61, 69, 74
 - phytosterols and, 540
 - Water
 - ceruloplasmin and, 439-52
 - phytosterol and, 533
 - reference infant body composition and, 1, 3-11, 14
 - Water-soluble vitamins
 - biotin and, 221-32
 - Weight loss
 - sarcopenia, nutritional frailty and in the elderly, 309-18
 - Weight reduction
 - conjugated linoleic acid metabolism and, 505, 507-10
 - Western Africa
 - malnutrition and poverty, 245
 - Whipworm
 - helminths and nutritional impairment, 46
 - White adipose tissue
 - genetically lean mice and, 474-75
 - PPAR γ and glucose homeostasis, 171-73, 181
 - Whole-body chemical analyses
 - reference infant body composition and, 3-6, 9
 - Whole-body kinetics
 - folate metabolism in vivo kinetics and, 199-215
 - Wilson disease
 - ceruloplasmin and, 439, 444
 - Worker productivity
 - helminths and nutritional impairment, 35, 42, 48, 51
 - World Bank
 - helminths and nutritional impairment, 51
 - World Health Organization (WHO)
- W**
- Wales
 - dietary flavonoids and, 29

helminths and nutritional
impairment, 52-53

X

Xenobiotics
 mutagenic
 dietary flavonoids and,
 25
Xenopus laevis
 ceruloplasmin and, 451
X-ray absorptiometry
 reference infant body

composition and, 1, 11,
13-14

Xylose
 helminths and nutritional
 impairment, 45

Y

Yersinia enterocolitica
 pre- and probiotics, 110
Yogurt
 pre- and probiotics, 114,
 117, 119

Z

Zanzibar
 helminths and nutritional
 impairment, 50
Zinc
 diet and genome
 methylation, 256-57
 helminths and nutritional
 impairment, 42
Zutphen Elderly Study
 dietary flavonoids and,
 28-30

CUMULATIVE INDEXES

CONTRIBUTING AUTHORS, VOLUMES 18-22

A

Abumrad NA, 22:383-415
Adeyemo AA, 21:47-71
Aggerbeck LP, 20:663-97
Alexander MP, 21:475-98
Allan CB, 19:1-16
Amir-Ahmady B,
21:121-40
Antinozzi PA, 19:511-44
Arai H, 19:343-55
Auwerx J, 22:167-97

B

Bacallao J, 22:241-53
Bacher A, 20:153-67
Baier W, 20:699-722
Baik HW, 19:357-77
Baile CA, 20:105-27
Bakillah A, 19:141-72
Bales CW, 22:309-23
Baranowski J, 19:17-40
Baranowski T,
19:17-40
Beck MA, 18:93-116
Behne D, 21:453-73
Bellush LL, 19:437-61
Belury MA, 22:505-31
Berman HK, 19:511-44
Berriot-Varoqueaux N,
20:663-97
Birch LL, 19:41-62
Blanton CA, 22:417-38
Bosch F, 18:207-32
Bowman BA, 19:xiii-xvii;
21:475-98
Broun P, 19:197-216
Brown EM, 20:507-33
Brown TK, 19:247-77
Bruce C, 18:297-330

C

Cai J, 20:485-505
Canavoso LE, 21:23-46
Carey HV, 20:195-219
Castenmiller JJM, 18:19-38
Chan HM, 20:595-626
Chouinard RA,
18:297-330
Clagett-Dame M,
22:347-81
Clarke SD, 19:63-90
Clinton SK, 18:413-40
Coleman RA, 20:77-103
Contreras JA, 20:365-93
Cooper RS, 21:47-71
Coschigano KT, 19:437-61
Crompton DWT, 22:35-59
Cullen KW, 19:17-40

D

Daniel PB, 18:353-83
Davidson NO, 20:169-93
Della-Fera MA, 20:105-27
DeLuca HF, 22:347-81
Delzenne NM, 18:117-43

E

Eberhardt S, 20:153-67
Eide DJ, 18:441-69
Eisenstein RS, 20:627-62
Evock-Clover CM,
18:63-92

F

Ferraris RP, 20:195-219
Fischer M, 20:153-67
Fleet JC, 18:233-58
Fomon SJ, 20:273-90;
22:1-17

Forrester TE, 21:47-71
Foster JD, 19:379-406
Fuller MF, 18:385-411

G

German JB, 20:561-93
Gettner S, 19:197-216
Giovannucci E, 18:413-40
Girard IA, 19:247-77
Gitlin JD, 22:439-58
Goodpaster BH,
22:325-46
Gordon JJ, 22:283-307
Gregory JF III, 18:277-96;
22:199-220
Grundty SM, 19:325-41

H

Habener JF, 18:353-83
Hadsell D, 19:407-36
Hajri T, 22:383-415
Hallberg L, 21:1-21
Hambidge M, 21:429-52
Harper M-E, 20:339-63
Harris ED, 20:291-310
Harris RBS, 20:45-75
Harrison EH, 18:259-76
Hashimoto T, 21:193-230
Hegsted DM, 20:1-19
Hellman NE, 22:439-58
Herbig AK, 21:255-82
Hill J, 21:323-41
Holm C, 20:365-93
Hooper LV, 22:283-307
Hoppel C, 18:179-206
Horwitz BA, 22:417-38
Huang M-T, 21:381-406
Hussain MM, 19:141-72
Hwang D, 20:431-56

J

Jeffery RW, 20:21-44
 Jones DP, 20:485-505
 Jouni ZE, 21:23-46
 Jump DB, 19:63-90

K

Kalogeris TJ, 21:231-54
 Karnas KJ, 21:23-46
 Kasum CM, 22:19-34
 Kelley DE, 22:325-46
 Kerner J, 18:179-206
 Kerr DE, 18:63-92
 Khan LK, 19:xiii-xvii
 Kis K, 20:153-67
 Klein N, 20:699-722
 Kopchick JJ, 19:437-61
 Kopple JD, 21:343-79
 Koski KG, 21:297-321
 Kozak LP, 20:339-63
 Krauss RM, 21:283-95
 Krebs NF, 21:429-52
 Kuhnlein HV, 20:595-626
 Kunz C, 20:699-722
 Kyriakopoulos A, 21:453-73

L

Lacourciere GM, 19:1-16
 Lamprecht SA, 19:545-85
 Landau JM, 21:381-406
 Lange AJ, 19:379-406
 Laurell H, 20:365-93
 Lazar MA, 20:535-59
 Lee MM, 20:221-48
 Levander OA, 18:93-116
 Lewin TM, 20:77-103
 Lieber CS, 20:395-430
 Lin SS, 20:221-48
 Lipkin M, 19:545-85
 Liu M, 21:231-54
 Lukaski HC, 19:279-302
 Luke A, 21:47-71

M

Martin RJ, 20:105-27
 May BK, 22:139-66
 McDonald RB, 22:417-38

McIntire WS, 18:145-77
 McMahon RJ, 22:221-39
 Mehrotra R, 21:343-79
 Meininger CJ, 22:61-86
 Midtvedt T, 22:283-307
 Moestrup SK, 21:407-28
 Morris HA, 22:139-66
 Morris SM Jr, 22:87-105
 Moss J, 19:485-509
 Muoio DM, 20:77-103

N

Nagy KA, 19:247-77
 Naik S, 20:311-38
 Nelson SE, 20:273-90;
 22:1-17
 Nesheim MC, 22:35-59
 Newgard CB, 19:511-44
 Newmark H, 19:545-85
 Newmark HL, 21:381-406
 Nordlie RC, 19:379-406

O

O'Dell BL, 18:1-18
 O'Doherty RM, 19:511-44
 Okazaki IJ, 19:485-509
 Omdahl JL, 22:139-66
 Osterlund T, 20:365-93
 Ostlund RE Jr, 22:533-49

P

Peña M, 22:241-53
 Pennington JE, 21:23-46
 Picard F, 22:167-97
 Prentice A, 20:249-72
 Prewitt TE, 21:47-71
 Pujol A, 18:207-32

Q

Quinlivan EP, 22:199-220

R

Rangwala SM, 20:535-59
 Rasmussen BB, 19:463-84
 Rasmussen KM, 21:73-95
 Rebouche CJ, 18:39-61
 Reddy B, 19:545-85

Reddy JK, 21:193-230
 Reeds PJ, 18:385-411
 Reitman ML, 22:459-82
 Rennie MJ, 20:457-83
 Richter G, 20:153-67
 Ritchie CS, 22:309-23
 Roberfroid MB, 18:117-43
 Roesler WJ, 21:141-65
 Rosen JM, 19:407-36
 Ross JA, 22:19-34
 Rudloff S, 20:699-722
 Russell RM, 19:357-77;
 22:483-504

S

Salati LM, 21:121-40
 Samson-Bouma M-E,
 20:663-97
 Sanderson IR, 20:311-38
 Scanlon KS, 21:475-98
 Scott ME, 21:297-321
 Seetharam B, 19:173-95
 Seim H, 18:39-61
 Selhub J, 19:217-46
 Serdula MK, 21:475-98
 Shelness GS, 20:169-93
 Sherwood NE, 20:21-44
 Sirotnak FM, 19:91-122
 Smitasiri S, 19:303-24
 Somerville C, 19:197-216
 Stadtman TC, 19:1-16
 Steele NC, 18:63-92
 Stephensen CB, 21:167-92
 Storlien L, 22:325-46
 Stover PJ, 21:255-82
 Strickland DK, 19:141-72
 Strobel S, 20:699-722
 Suh JR, 21:255-82
 Sul HS, 18:331-51

T

Tabas I, 19:123-39
 Tall AR, 18:297-330
 Teitelbaum JE, 22:107-38
 Thomson AB, 21:231-54
 Tipton KD, 20:457-83
 Tolner B, 19:91-122

Traber MG, 19:343-55
Trotter PJ, 21:97-119
Tso P, 21:231-54

U

Underwood BA, 19:303-24

V

Valera A, 18:207-32
Van den Veyver IB,
22:255-82
Verroust PJ, 21:407-28

W

Walker WA, 22:107-38
Walker WH, 18:353-83
Walzem RL, 20:561-93
Wang D, 18:331-51
Watson WH, 20:485-505
Wells MA, 21:23-46
Wessling-Resnick M,
20:129-51
West CE, 18:19-38
Wetterau JR, 20:663-97
Wing RR, 21:323-41

Wolfe RR, 19:463-84
Wood RJ, 18:233-58
Wray-Cahen CD, 18:63-92
Wu G, 22:61-86
Wyszomierski SL, 19:407-36

Y

Yang CS, 21:381-406
Yeum K-J, 22:483-504

Z

Ziegler EE, 20:273-90

CHAPTER TITLES, VOLUMES 18-22

Prefatory Essays

Personal Reflections on a Galvanizing Trail Obesity: A Major Global Public Health Problem	BL O'Dell	18:1-18
From Chick Nutrition to Nutrition Policy	LK Khan, BA Bowman	19:xiii-xvii
Perspectives on Nutritional Iron Deficiency	DM Hegsted	20:1-19
Body Composition of the Male and Female Reference Infants	L Hallberg	21:1-21
	SJ Fomon, SE Nelson	22:1-17

Energy Metabolism

Leptin—Much More Than a Satiety Signal	RBS Harris	20:45-75
Mitochondrial Uncoupling Proteins in Energy Expenditure	LP Kozak, M-E Harper	20:339-63
Transcriptional Control of Adipogenesis	SM Rangwala, MA Lazar	20:535-59
Sarcopenia, Weight Loss, and Nutritional Frailty in the Elderly	CW Bales, CS Ritchie	22:309-23
Physiologic Determinants of the Anorexia of Aging: Insights from Animal Studies	BA Horwitz, CA Blanton, RB McDonald	22:417-38

Carbohydrates

Dietary Fructans	MB Roberfroid, NM Delzenne	18:117-43
The Optimal Ratio of Fat-to-Carbohydrate in the Diet	SM Grundy	19:325-41
Metabolic Engineering with Recombinant Adenoviruses	PA Antinozzi, HK Berman, RM O'Doherty, CB Newgard	19:511-44
The Behavioral Determinants of Exercise: Implications for Physical Activity Interventions	NE Sherwood, RW Jeffery	20:21-44
Oligosaccharides in Human Milk: Structural, Functional, and Metabolic Aspects	C Kunz, S Rudloff, W Baier, N Klein, S Strobel	20:699-722

Lipids

Plasma Lipid Transfer Proteins, High-Density Lipoproteins, and Reverse Cholesterol Transport	C Bruce, RA Chouinard, AR Tall	18:297-330
Nonoxidative Modifications of Lipoproteins in Atherogenesis	I Tabas	19:123-39
The Mammalian Low-Density Lipoprotein Receptor Family	MM Hussain, DK Strickland, A Bakillah	19:141-72
Genetic Engineering of Plant Lipids	P Broun, S Gettner, C Sermerville	19:197-216
Regulation of Fatty Acid Oxidation in Skeletal Muscle	BB Rasmussen, RR Wolfe	19:463-84
Physiological and Nutritional Regulation of Enzymes of Triacylglycerol Synthesis	RA Coleman, TM Lewin, DM Muoio	20:77-103
Apolipoprotein B: mRNA Editing, Lipoprotein Assembly, and Presecretory Degradation	NO Davidson, GS Shelness	20:169-93
Molecular Mechanisms Regulating Hormone-Sensitive Lipase and Lipolysis	C Holm, T Osterlund, H Laurell, JA Contreras	20:365-93
Fatty Acids and Immune Responses—A New Perspective in Searching for Clues to Mechanism	D Hwang	20:431-56
The Role of the Microsomal Triglyceride Transfer Protein in Abetalipoproteinemia	N Berriot-Varoqueaux, LP Aggerbeck, M-E Samson-Bouma, JR Wetterau	20:663-97
Peroxisomal β -Oxidation and Peroxisome Proliferator-Activated Receptor α : An Adaptive Metabolic System	JK Reddy, T Hashimoto	21:193-230
The Role of Apolipoprotein A-IV in the Regulation of Food Intake	PTso, M Liu, TJ Kalogeris, ABR Thomson	21:231-54
PPAR γ and Glucose Homeostasis	F Picard, J Auwerx	22:167-97
Fatty Acid Transport Across Membranes: Relevance to Nutrition and Metabolic Pathology	T Hajri, NA Abumrad	22:383-415
Dietary Conjugated Linoleic Acid in Health: Physiological Effects and Mechanisms of Action	MA Belury	22:505-31

Proteins, Peptides, and Amino Acids

Carnitine Metabolism and Its Regulation in Microorganisms and Mammals	CJ Rebouche, H Seim	18:39-61
Redefining Body Composition: Nutrients, Hormones, and Genes in Meat Production	CD Wray-Cahen, DE Kerr, CM Evock-Clover, NC Steele	18:63-92
Nitrogen Cycling in the Gut	MF Fuller, PJ Reeds	18:385-411
Homocysteine Metabolism	J Selhub	19:217-46
Protein and Amino Acid Metabolism During and After Exercise and the Effects of Nutrition	MJ Rennie, KD Tipton	20:457-83
Diet and Apoptosis	WH Watson, J Cai, DP Jones	20:485-505
Regulation of Nitric Oxide Synthesis by Dietary Factors	G Wu, CJ Meininger	22:61-86
Regulation of Enzymes of the Urea Cycle and Arginine Metabolism	SM Morris Jr.	22:87-105

Vitamins

Bioavailability and Bioconversion of Carotenoids	JJM Castenmiller, CE West	18:19-38
Newly Discovered Redox Cofactors: Possible Nutritional, Medical, and Pharmacological Relevance to Higher Animals	WS McIntire	18:145-77
Lipases and Carboxylesterases: Possible Roles in the Hepatic Metabolism of Retinol	EH Harrison	18:259-76
Nutritional Properties and Significance of Vitamin Glycosides	JF Gregory III	18:277-96
Carrier-Mediated Membrane Transport of Folates in Mammalian Cells	FM Sirotnak, B Tolner	19:91-122
Receptor-Mediated Endocytosis of Cobalamin (Vitamin B ₁₂)	B Seetharam	19:173-95
Molecular Mechanisms of Vitamin E Transport	MG Traber, H Arai	19:343-55
Characterization of Glycosylphosphatidylinositol-Anchored, Secreted, and Intracellular Vertebrate Mono-ADP-Ribosyltransferases	IJ Okazaki, J Moss	19:485-509
Biosynthesis of Vitamin B ₂	A Bacher, S Eberhardt, M Fischer, K Kis, G Richter	20:153-67
Vitamin A, Infection, and Immune Function	CB Stephensen	21:167-92
New Perspectives on Folate Catabolism	JR Suh, AK Herbig, PJ Stover	21:255-82

Hydroxylase Enzymes of the Vitamin D
Pathway: Expression, Function,
and Regulation

JL Omdahl, HA Morris, 22:139-66
BK May

In Vivo Kinetics of Folate Metabolism

JF Gregory III, 22:199-220
EP Quinlivan

Biotin in Metabolism and Molecular Biology
The Role of Vitamin A in Mammalian
Reproduction and Embryonic Development

RJ McMahon 22:221-39
M Clagett-Dame, 22:347-81
HF DeLuca

Carotenoid Bioavailability and Bioconversion

K-J Yeum, RM Russell 22:483-504

Inorganic Nutrients

The Molecular Biology of Metal Ion
Transport in *Saccharomyces cerevisiae*
Responsiveness of Selenoproteins to
Dietary Selenium

DJ Eide 18:441-69

Chromium as a Supplement
Iron Transport
Retention of Iron by Infants

CB Allan, GM Lacourciere, 19:1-16
TC Stadman
HC Lukaski 19:279-302
M Wessling-Resnick 20:129-51
SJ Fomon, SE Nelson, 20:273-90
EE Ziegler

Cellular Copper Transport and Metabolism
The Extracellular Ca^{2+} -Sensing Receptor
(CaR): Central Mediator of Systemic
Calcium Homeostasis
Iron Regulatory Proteins and the Molecular
Control of Mammalian Iron Metabolism
Interrelationships of Key Variables of Human
Zinc Homeostasis: Dietary Zinc
Requirements

ED Harris 20:291-310
EM Brown 20:507-33

Newly Characterized Selenoproteins

M Hambidge, NF Krebs 21:429-52
D Behne, 21:453-73
A Kyriakopoulos

Ceruloplasmin Metabolism and Function

NE Hellman, JD Gitlin 22:439-58

Other Food Components

Newly Discovered Redox Cofactors: Possible
Nutritional, Medical, and Pharmacological
Relevance to Higher Animals
Dietary Factors in Human Colorectal Cancer

WS McIntire 18:145-77
M Lipkin, B Reddy, 19:545-85
H Newmark,
SA Lamprecht

Alcohol: Its Metabolism and Interaction
with Nutrition
The Health Benefits of Wine

CS Lieber 20:395-430
JB German, RL Walzem 20:561-93

Inhibition of Carcinogenesis by Dietary Polyphenolic Compounds	CS Yang, JM Landau, M-T Huang, HL Newmark	21:381-406
Dietary Flavonoids: Bioavailability, Metabolic Effects, and Safety	JA Ross, CM Kasum	22:19-34

Nutrition and Metabolic Regulation

Transgenic Mice in the Analysis of Metabolic Regulation	F Bosch, A Pujol, A Valera	18:207-32
Nutritional and Hormonal Regulation of Enzymes in Fat Synthesis: Studies of Fatty Acid Synthase and Mitochondrial Glycerol-3-Phosphate Acyltransferase Gene Transcription	HS Sul, D Wang	18:331-51
Regulation of Gene Expression by Dietary Fat	DB Jump, SD Clarke	19:63-90
Regulation of Glucose Production by the Liver	RC Nordlie, JD Foster, AJ Lange	19:379-406
Intestinal Transport During Fasting and Malnutrition	RP Ferraris, HV Carey	20:195-219
Dietary Regulation of Intestinal Gene Expression	IR Sanderson, S Naik	20:311-38
Dietary Regulation of Expression of Glucose-6-Phosphate Dehydrogenase	LM Salati, B Amir-Ahmady	21:121-40
The Role of C/EBP in Nutrient and Hormonal Regulation of Gene Expression	WJ Roesler	21:141-65
Muscle Triglyceride and Insulin Resistance	DE Kelley, BH Goodpaster, L Storlien	22:325-46
Metabolic Lessons from Genetically Lean Mice	ML Reitman	22:459-82

Genetics and Molecular Biology

Cyclic AMP Signaling and Gene Regulation	PB Daniel, WH Walker, JF Habener	18:353-83
Regulation of Milk Protein Gene Expression	JM Rosen, SL Wyszomierski, D Hadsell	19:407-36
Transgenic Models of Growth Hormone Action	JJ Kopchick, LL Bellush, KT Coschigano	19:437-61

Clinical Nutrition

Genetic Disorders of Carnitine Metabolism and Their Nutritional Management	J Kerner, C Hoppel	18:179-206
--	--------------------	------------

The Genetics of Osteoporosis: Vitamin D Receptor Polymorphisms	RJ Wood, JC Fleet	18:233-58
Diet, Nutrition, and Prostate Cancer	SK Clinton, E Giovannucci	18:413-40
Psychosocial Correlates of Dietary Intake: Advancing Dietary Intervention	T Baranowski, KW Cullen, J Baranowski	19:17-40
Development of Food Preferences	LL Birch	19:41-62
Vitamin B ₁₂ Deficiency in the Elderly	HW Baik, RM Russell	19:357-77
Dietary Fat and Breast Cancer	MM Lee, SS Lin	20:221-48
Calcium in Pregnancy and Lactation	A Prentice	20:249-72
The 'Fetal Origins' Hypothesis: Challenges and Opportunities for Maternal and Child Nutrition	KM Rasmussen	21:73-95
Dietary and Genetic Effects on Low-Density Lipoprotein Heterogeneity	RM Krauss	21:283-95
Successful Weight Loss Maintenance	RR Wing, JO Hill	21:323-41
Nutritional Management of Maintenance Dialysis Patients: Why Aren't We Doing Better?	R Mehrotra, JD Kopple	21:343-79
What Are Preschool Children Eating? A Review of Dietary Assessment	MK Serdula, MP Valexander, KS Scanlon, BA Bowman	21:475-98
How Host-Microbial Interactions Shape the Nutrient Environment of the Mammalian Intestine	LV Hooper, T Midtvedt, JI Gordon	22:283-307
Phytosterols in Human Nutrition	RE Ostlund Jr.	22:533-49
Nutritional Anthropology		
Environmental Contaminants in Traditional Food Systems of Northern Indigenous Peoples	HV Kuhnlein, HM Chan	20:595-626
Nutritional Consequences of the African Diaspora	A Luke, RS Cooper, TE Prewitt, AA Adeyemo, TE Forrester	21:47-71
Nutritional Microbiology		
Dietary Oxidative Stress and the Potentiation of Viral Infection	MA Beck, OA Levander	18:93-116

Gastrointestinal Nematodes, Nutrition,
and Immunity: Breaking the Negative
Spiral

KG Koski, ME Scott 21:297-321

Public Health Nutrition

Micronutrient Malnutrition: Policies
and Programs for Control and
Their Implications

BA Underwood,
S Smitasiri 19:303-24

Nutritional Impact of Intestinal
Helminthiasis During the Human
Life Cycle

D Crompton, MC Nesheim 22:35-59

Nutritional Impact of Pre- and Probiotics
as Protective Gastrointestinal Organisms
Malnutrition and Poverty

JE Teitelbaum, WA Walker 22:107-38
M Peña, J Bacallao 22:241-53

Comparative Nutrition

Energetics of Free-Ranging Mammals,
Reptiles, and Birds

KA Nagy, IA Girard,
TK Brown 19:247-77

Fat Metabolism in Insects

LE Canavoso, ZE Jouni,
KJ Karnas,
JE Pennington,
MA Wells 21:23-46

The Genetics of Fatty Acid Metabolism
in *Saccharomyces Cerevisiae*

PJ Trotter 21:97-119

Special Topics

Regulation of Metabolism and Body Fat
Mass by Leptin

CA Baile, MA Della-Fera,
RJ Martin 20:105-27

Megalin- and Cubilin-Mediated Endocytosis
of Protein-Bound Vitamins, Lipids,
and Hormones in Polarized Epithelia

SK Moestrup,
PJ Verroust 21:407-28

Genetics Effects of Methylation Diets

IB Van den Veyver 22:255-82

